a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

MARCH, 1959

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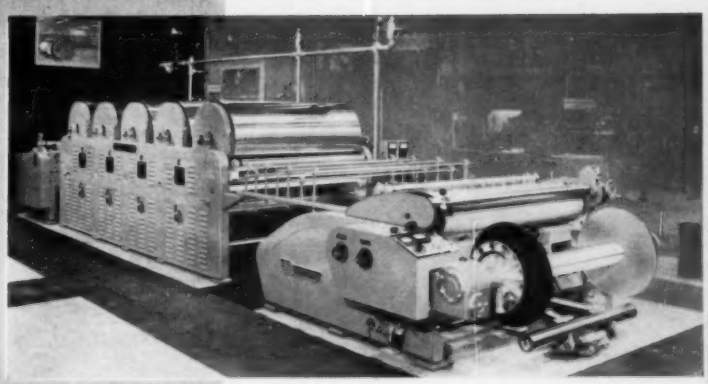

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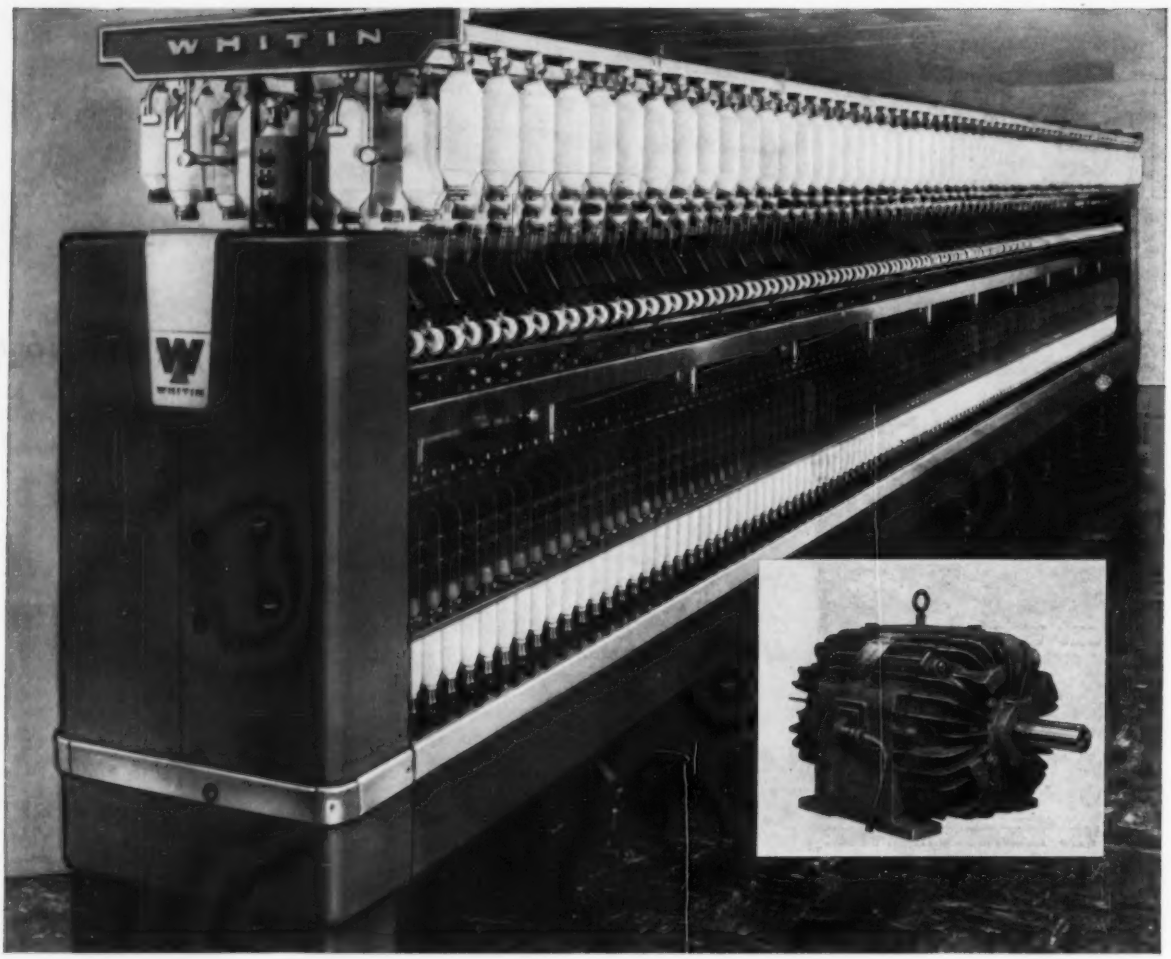

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DIEHL* motors power new spinning frame

Described as "the world's most advanced spinning frame," the new "Piedmont" recently announced by Whitin Machine Works, Whitinsville, Massachusetts represents an investment of over a million dollars in research and tooling, and incorporates a score of innovations designed to achieve maximum operational efficiency and productivity in combination with attractiveness in appearance.

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*U.S. Patents 2,740,689 and 2,820,690

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No. 53 – Fluorescent Agents in Peroxide Bleaching of Knit Goods.

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Please tell me more about your Four-Fold Engineering Service.

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Textile Industries

Formerly "COTTON"

MARCH 1959 VOL. 123, NO. 3

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NEXT MONTH

■ TEXTILE INDUSTRIES for April will spotlight a special feature on knitting, with complete details on the Knitting Arts Exhibition, to be held at Atlantic City May 4-8. In addition, modern knitting practices will be reviewed, with emphasis on flexibility.

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Photo courtesy of Lowndes Products, Inc., Philadelphia, Pa.

Look what's sweeping the country

A rapidly growing and profitable field is the manufacture of nonwoven fabrics. The product shown here is a good example—a cleaning cloth of rare efficiency and economy. And one reason for its exceptional qualities is this: a principal ingredient of the bonding compound is CHEMIGUM LATEX.

To the cloth CHEMIGUM LATEX helps supply the soft texture needed on both smooth and irregular surfaces for light dusting. Yet it also assures adequate abrasion resistance and tear-strength to withstand rough usage.

CHEMIGUM LATEX is a colloidal dispersion of a butadiene-acrylonitrile copolymer. It is used along with modifying materials, in the bonding agent of nonwoven fabrics to impart permanent adhesion, flexibility and softness to the smooth, porous, multidirectional strength mat of random fibers.

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. . . you can process more yards per penny spent for rolls IF you will use the S-W ROLL-GUARD Plan.

S-W

We invite you to make your local S-W representative prove this in your mill, on your machinery, this month.

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SHORTS & REMNANTS

► "Man-Made Fibers" continues to bring in requests for reprints several months after its publication (it was in TI for Aug., 1958). Most recent to ask were **Dr. Clide I. Carr,** Research Center, U. S. Rubber Co., Wayne, N. J.; **D. E. De Tuncq,** PA, 3M Co., St. Paul, Minn.; **Edward Messekian,** Kaye-Turabian Rug Co., White Plains, N. Y.; **L. Korn,** Dev. Div., Amoride Ltd., Colne, Eng.; **E. E. Wrege,** American Viscose Corp., Marcus Hook, Pa.; Milwaukee Public Library; Atlantic By-Products Inc., NYC; and **A. J. McKeown,** PA, Canadian Hanson & Van Winkle Co., Ltd., Toronto, Ont. Also from a little old lady in Dubuque who doesn't read the *New Yorker.*

Add Funeral Homes

When Nelson Furniture Co., Okmulgee, Okla. ("Feather Your nest with a Little Down") and H. C. Geiple & Son, Glen Rock, Pa. (Funeral Home, Furniture and Floor Coverings) write for reprints of the man-made fiber chart, we figure we have it made. Where else do you get pizza kitchens, shoe repair shops, horse farms, hi-fi recorders, and now furniture stores, and funeral directors (as well as textile mills) all in one little ole magazine? Only in TI, of course.

Anyway from the woods of Minnesota to the plains of Texas, from Jersey to California, came requests for more copies of the 1958 edition of TI's handy fiber reference. Seems James Lees & Sons Co., Bridgeport, Pa., published a little item on this feature in their "Carpet News," and inquiries from Lees' customers came in from 20 states and D. C. Indiana won with five inquiries, but several states like Minn., Cal., etc., followed closely behind.

► An interesting reprint from good advertiser, Harshaw Chemical Co., Cleveland, O., says that "The Nation's Top 100 Industrial Corporations all use Harshaw Chemicals," and that includes a wide variety of industries, for Harshaw produces over 1,000 different chemicals for more than 15,000 customers.

TI is also well known, as a foreign letter addressed to us at Hanna Building, Cleveland, O., and intended for

Finishing department at Peerless Woolen Mills, Cleveland, Tenn., showing ductwork and zone control atomizers.

PEERLESS WOOLEN MILLS

chose Amco Air Conditioning at its Cleveland Tenn. Plant to be

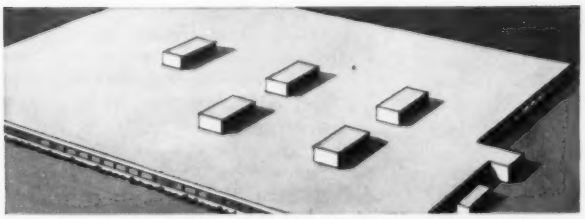
INDEPENDENT OF OUTSIDE WEATHER

An Amco dual (split) system has given Peerless Woolen Mills exactly what was wanted... tailor-made *inside air* regardless of *outside weather!*

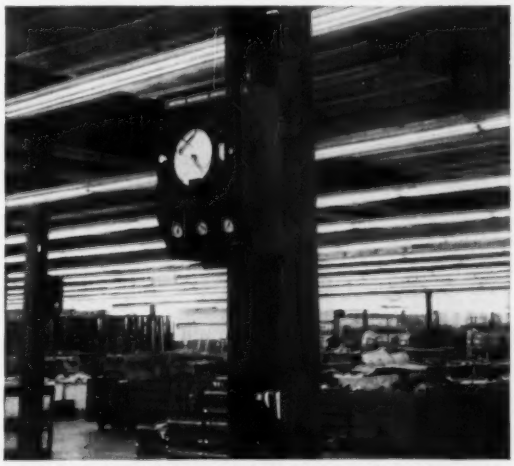
Amco Central Station Air Conditioning, augmented by room atomizers, permits each of the different manufacturing areas in this 10-acre building to be controlled separately.

Peerless spared nothing to assure this *profitable precision control* of temperature and humidity. Over 1000 tons of refrigeration capacity and 3 miles of ductwork were provided. Five of industry's largest commercial fans were installed.

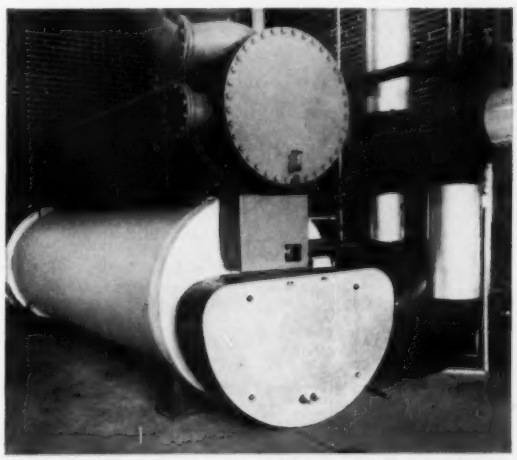
If you have a textile mill conditioning problem, ask an Amco engineer to call. There's no obligation.



On top of mill building are 5 apparatus rooms, each housing fan, air washer, filter, and chilled water tank.



Amco Aspirating Cabinet controls condition of air in weave room. Air temperature and humidity register on recorder chart.



1000-ton capacity refrigeration machine is used for temperature control the year-round. Condenser is at top; chiller at bottom.

AMERICAN MOISTENING COMPANY

Makers of Air Conditioning Systems and Textile Mill Equipment Since 1888

Home office and plant: Cleveland, N.C. Branches in Atlanta, Providence, Toronto.

CHANGE BELTS IN MINUTES

Texalon, the new all-synthetic belting by Rhoads, is easily made endless in minutes on the machine by your own maintenance personnel. Eliminates shutdowns for shortening.

Replaces leather, rubber, and woven endless belting — for power transmission, carrier tapes, and conveyor belting.

Texalon lasts longer, works better. Bounces without stretch. No belt pound because hooks and lacings are eliminated. Belt widths up to 24".

Find out how Texalon cuts belting costs, improves performance. Give us a few facts about your application, or write for bulletin to J. E. Rhoads & Sons, Wilmington 99, Delaware.

Typical Texalon Applications

WINDER . . . Texalon replaced drive belt, and a woven endless gainer belt. Quickly installed, maintains desired tension. Operator engages and disengages the machine by raising the shaft — Texalon's elasticity makes it easy.

LINESHAFT DRIVE . . . Stretch was a problem with leather belting on a knitting machine lineshaft with no take-up. 5" Texalon belt, running on two 16" diameter pulleys, eliminates shutdowns for belt shortening.

SWEATER MACHINE . . . The drive for a sweater knitting machine had take-up or idler and leather belting stretched and slipped. 5" Texalon belt holds its tension . . . eliminated another maintenance headache.

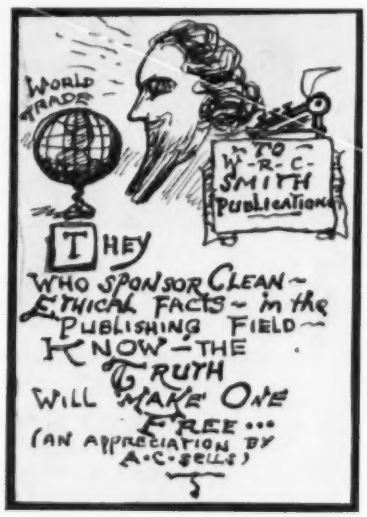
RHOADS

Where the Job Selects the Belt . . . Since 1702

SHORTS & REMNANTS

Cleveland Liner & Mfg. Co. was forwarded to us.

► "An appreciation of clean, factual publishing" arrived the other day from A. C. Sells of Atlanta, who describes himself as a former free lance writer. This little sketch accompanied his letter:



"I am in a null and void financial condition, with the writing field shrunk to trivia and drool," he says. We hope that better times are ahead, Mr. Sells.

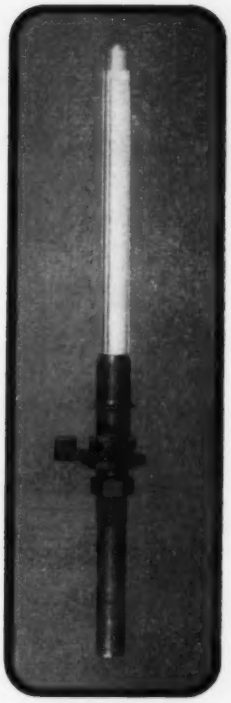
TI in Spanish

Beginning in April, TEXTILE INDUSTRIES will appear in a Spanish-language edition, to be published in Mexico City by our affiliate, Publicaciones Rolland, S. de R. L., for the Mexican, Central American, and South American textile mills. Each month, INDUSTRIAS TEXTILES, as it will be called, will carry selected articles originating in TEXTILE INDUSTRIES. These articles will be picked on the basis of their special interest for executives, engineers, supervisors, and other management and production personnel in Latin American mills, and will be translated into Spanish by textile engineers on the Rolland staff.

► According to sources usually considered reliable, the slide rule was invented in the early part of the 19th century by a French army officer named Mannheim. Slide rules now come in many shapes and sizes, from

(*Continued on page 12*)

ROBERTS *SUPREME* SPINDLES



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- Widely Spaced at Base Top and Bottom
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- Speeds up to 15,000 R.P.M.
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Supreme Spindles are manufactured to super-precision tolerances and are unconditionally guaranteed. Ball bearings and boots are guaranteed in normal use for five years.

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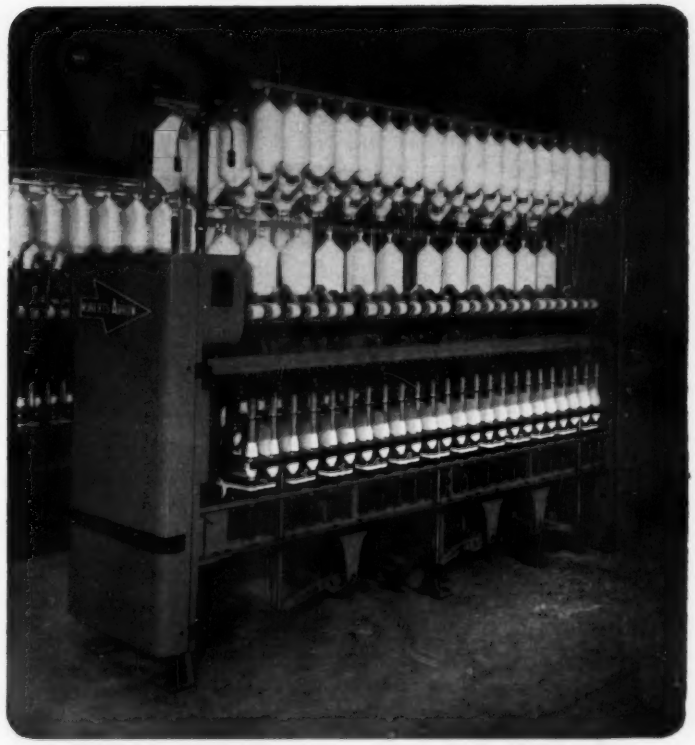
ALSO AVAILABLE AS CHANGE-OVER MODERNIZATION ON ANY MAKE OF FRAME



Very Advanced

ARROW SPINNING features:

- PosiWate Top Roll Suspension
- UnaRing Balloon Control
- EvenGrip Fluted Bottom Rolls
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- Double-Apron High Draft System
- UnitVac Power-Suction Cleaning
- Roberts All-Ball-Bearing Head
- UniTized Sectional Frame
- AeroCreel with Latch-Type Bobbin Holders
- Flexibility For Cotton And Synthetics

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

For further information use Handy Return Card, Page 163

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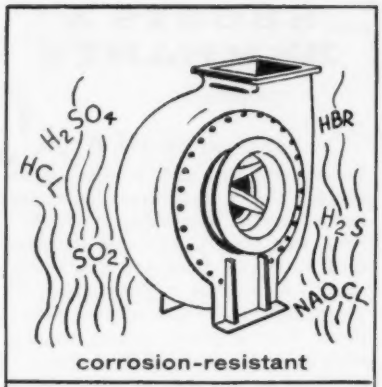
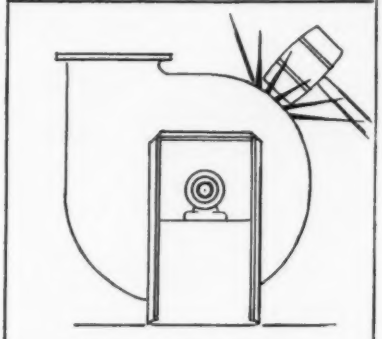
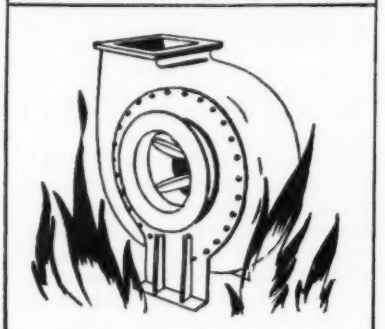


corrosion-resistant



impact-resistant



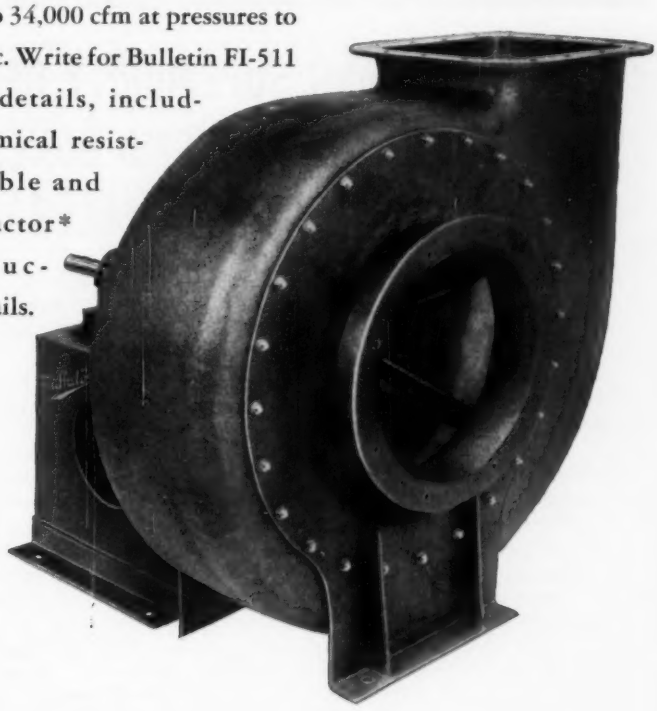
won't support combustion

"BUFFALO" RESIN-BONDED FIBER GLASS FUME FANS

These new fans further broaden the selection of "Buffalo" exhausters for the chemical industries, and offer advantages of versatility, lighter weight, reasonable cost and reliability.

The new Type "FG" offers excellent chemical resistance to a wide variety of acids, salts, gases, organic materials and other corrosives. It is suitable for temperature applications up to 225°F.

The fan housing is entirely of resin-bonded fiber glass, with stainless steel studs molded-in for attachment to the bearing stand. The rotor is a carefully balanced steel wheel with all exposed parts encased in thick fiber glass. In standard capacities up to 34,000 cfm at pressures to 10″ static. Write for Bulletin FI-511 for all details, including chemical resistance table and "Q" Factor* construction details.



**The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.*

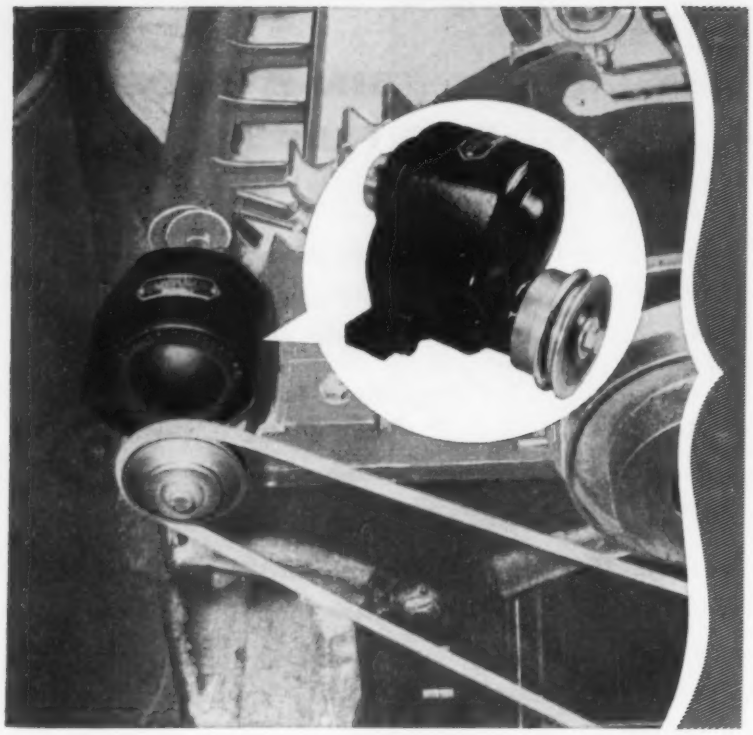
"Buffalo"

BUFFALO FORGE COMPANY

BUFFALO, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING



OUTSTANDING SUPERIORITY OF SOUTHERN STATES COMB BOXES PROVED IN NATION'S MILLS

More than 50,000 Southern States Comb Boxes have been placed in service during the past 11 years—equal to 60% of all the nation's cotton cards. Many mills have changed over 100%.

This overwhelming acceptance proves conclusively that mills can easily justify the small investment. Cardroom overseers quickly recognize the savings that result from their use: no oiling, cleaning or maintenance for the life of the unit; steady, even strokes to drive the comb with perfection; elimination of hot-running, leaky, rattling old-style boxes and their headaches.

Southern States Comb Boxes are furnished complete with an adjuster base for mounting on any make of cotton card. Bases are double tapped to permit rapid mounting on either right or left hand cards. Installation is quick and easy.

Let us show you with facts and figures how it has paid hundreds of mills to install Southern States ball-bearing, sealed-for-life, Comb Boxes; prove how much they will save you in one year. Write direct for a representative to call at your convenience.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

SHORTS & REMNANTS

(*Continued from page 8*)

the straight slip stick in sizes up to several feet through circular types and others in the shape of a helix. Some engineers have found that the time saved by their use can easily offset, sometimes in less than 20 years, the time it takes to learn to use them. Now, if you're having trouble with noisy fans in your mill, here's a dandy new slide rule that will tell you how much more noise you'll have if you put in some more fans:

This slide rule gives you fan noise ratings in "sones." It's available free from Propellair Division, Robbins & Myers, Inc., Springfield, O.

Sooner or later it was bound to happen that a textile engineer would develop a textile slide rule, and such indeed is now the case. Herr Ulrich Schirdewan is the gentleman responsible, and he is with Deutscher Spinnereimaschinenbau Ingolstadt, which it is perhaps superfluous to say is a German textile machinery firm. Here is how part of Herr Schirdewan's slide rule looks:

This rule will do everything from converting yarn counts from one system to another to calculating production and efficiency of looms, and figuring change gears. It will help *you* to do it, that is. The rule is made by A. W. Faber-Castell in Germany (there is a special English/American model), and is available in the U. S. from A. W. Faber-Castell Pencil Co., Dickerson & Bittman Sts., Newark 4, N. J. We regret to say that this slide rule has no scale for determining how to get off the hook when print cloth drops half a cent and the warehouse is full.

► One mail brought the following printed poem by **Thurston Powell,** Alexander City, Ala.

The Apothecary

The druggist is sincere
And always so kind
As fill your needs
Of trouble in mind.

For a script to be filled
Or words of advice,
No matter what,
He can be so nice.

He answers all the calls,
Even night and day.
Little one might think,
It's more than his pay.

He's a sick person's friend,
With knowledge and mind
Helps the sick get well
While being so kind.

► And then **E. G. Field** of Atlanta sends on another poem from "The Christian Science Monitor" which certainly gets cotton and corn mixed up along the way but here it is anyway:

Picking Our Clothes From the Air

We used to use coal in our cookstoves,
Gas, too, was intended to burn;
And wood was for heating and building
But things now have taken a turn.

So we're wearing the coal in our garments,
One's suit may be all gas and air.
It somehow impels one to wonder
If anything really is there.

Synthetics of wood chips and splinters
Of coal, air, and salt, glass, and corn
Are clothing us moderns—imagine
Our skeptical ancestors' scorn!

Today when we say a frock's "Airy"
We may mean it's literally true;
For though corn and wool are still with us,
Most fibers we wear never grew.

► What's in a name dept. The Ford Chevrolet Co. is at Clover, N. C., and there is a big Texaco station at Gulf, N. C. Further, the Chamber of Commerce at Pondicherry, India, addressed TI as "Tea Industries" on "Patchtree" street. We've been called worse, I guess, and also better.

► Driving through a textile town the other day, the thought occurred that most textile mills are not located in *real* textile towns—for instance, there is no weaving mill located in Loombeam, Ark., as far as we know. In fact, Loombeam is so small that it's not on any map. But how about a cotton mill in Cotton, Ga.; Cardwell, Mo.; Spinnerstown, Pa.; Bobbin, Tex.; Creel, Ala.; Sampson, Fla.; Roll, Okla.; Ring, Ark.; Winder, Ga.; or Sizemore, Ala.? Or a wool mill in Woolsey, Ga.; Cardington, O.; Garnett, Ark.; Peralta, N. M.; Gill, Ark.; or Fuller, Ga.? Weaver, W. Va.; Harness, Ill.; Oxford, Mass.; Terry, Ind.; Tweed, Ont.; Calico Rock, Ark.; or Kersey, Colo.; would be suitable for weaving mills. Knitters could set up shop in Needles, Calif.; Butts, Ga.; or Jerseytown, Pa. Garment plants

(Continued on page 16)

SOUTHERN STATES' NEW COILER LINE HAS ALL ENGINEERING AND DESIGN FEATURES WANTED BY MILL MEN

To provide mills with a premium-quality coiler, every engineering and design feature wanted by mill men has been included on the new Southern States Coilers.

A new center adapter (see cutaway view above) permits the stand, head, and base to swivel as a unit within the adapter collar. The coiler may thus be offset for can diameters up to 20 inches and still maintain a straight gear drive take-off for coilers of all makes.

Southern States Coilers are designed for direct attachment to any make of card, left or right hand. Installation is rapid and economical. Other outstanding features of the Southern States Coiler include: ball bearing throughout—head, shaft, cantable ... cut tooth gears throughout ... tubular steel stand ... precision-ground calender rolls ... self-aligning pillow blocks on upright and calender roll shafts ... fully adjustable can table ... quickly detached coil spring roll-loading device ... and many others fully described in our Technical Bulletin 205, available from your Southern States representative or by mail direct from us.

SS

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

MEADOWS *Anti-Friction* TWISTERS

This photograph shows an installation of Meadows Twisters in a very large Southern thread mill. BUT it could just as well have been in a tire cord plant (ply or cable) or a combed, carded or filament sales yarn plant, or even a carpet yarn plant. The same twister, with minor alterations, is being used for many types of yarn and is available to fit your needs as to gauge and ring size.

In actual operation in various textile fields the proven Meadows Anti-Friction features enable Meadows-equipped mills to turn out yarn of superior quality because of smoother running and fewer ends down; to run at much higher speeds with less horsepower and less maintenance; to run much larger packages—and to find other economies that surprise them, pleasantly.

We would be glad to discuss your twisting needs, and the application to them of the versatile, economical, modern Meadows Twisters.

MEADOWS MANUFACTURING COMPANY

Established 1931

ATLANTA 10, GEORGIA

Visit us at 1190 Astor Ave., S. W. **Phone** us at Plaza 5-1663 **Write** us at P. O. Drawer 10876

9 forms to fit your needs in

SOLVAY CAUSTIC SODA

. . . and all include Solvay extra services

To help you use SOLVAY Caustic Soda most *efficiently*, we make 9 forms. To supply it *rapidly* and *dependably*, we produce it in 5 widely-scattered plants. To aid you in applying it most *effectively*, we provide technical service and literature based on extensive field work with users and painstaking laboratory research.

Sodium Nitrite • Calcium Chloride • Chlorine • Caustic Soda • Caustic Potash Chloroform • Potassium Carbonate • Sodium Bicarbonate • Vinyl Chloride • Methyl Chloride • Ammonium Chloride • Methylene Chloride • Monochlorobenzene Soda Ash • Para-dichlorobenzene • Ortho-dichlorobenzene • Carbon Tetrachloride Ammonium Bicarbonate • Snowflake® Crystals • Aluminum Chloride • Cleaning Compounds • Hydrogen Peroxide • Mutual Chromium Chemicals

Allied Chemical

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

SOLVAY dealers and branch offices are located in major centers from coast to coast.

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

Please send without cost SOLVAY Caustic Soda sample or samples and literature as follows:

☐ 76% powdered ☐ 76% solid ☐ 76% ground ☐ 76% flake
☐ 76% small flake ☐ 50% liquor ☐ 73% liquor ☐ 50% mercury cell liquor ☐ 73% mercury cell liquor
☐ Technical Bulletin No. 6, "Caustic Soda"
☐ Wall chart of handling precautions

Name_____

Position_____

Company_____

Phone_____

Address_____

BQ-39

City_____ Zone_____ State_____

Tyer's expanded facilities for covering rubber rolls include the huge new vulcanizer shown above. 37 feet long, it has an inside diameter of 7 feet. Tyer grinders now accommodate rolls up to 60 inches in diameter and 366 inch face.

Tyer roll fabrication ranges in scope from tiny 1-ounce envelope rolls to giant suction press rolls used by paper mills. Hundreds of different compounds have been developed for our customers to take care of the functions to be performed by each individual roll.

In more than 30 years of roll manufacturing, Tyer has found the answer to many difficult rubber roll problems. Chances are, we can solve *your* problems, too. Write today for free brochure or a visit from a Tyer sales engineer.

TYER *Rubber Company*

ANDOVER, MASSACHUSETTS, U. S. A.

SHORTS & REMNANTS

(*Continued from page* 13)

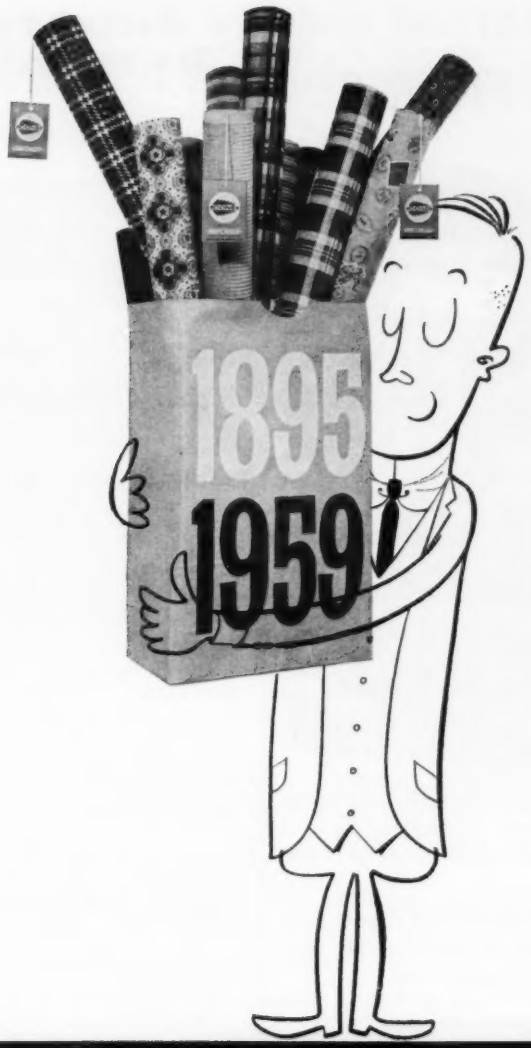
have a wide choice: Cutter, N. M.; Glover, Vt.; Draper, N. C.; Bloomer, Wis.; Coats, N. C.; Derby, Conn.; Hatboro, Pa.; Lapel, Ind.; Levis, P. Q.; Red Jacket, Mich.; Shortsville, N. Y.; Smock, Pa.; Tuxedo, N. Y.; and Cardigan, Minn. And then everyone could send the goods to Dyer, Ark., or Range, Okla., to be finished.

► Last month (on p. 77) we told you about the big public relations program for the textile industry which has been developed by P. H. Hanes Knitting Co. The program includes the use of billboards, and here's what one of them looks like:

► American Cotton Manufacturers Institute convenes at Palm Beach, Fla., the 19th to 21st of this month for its 10th annual meeting. The folder giving convention information says, "Representing the World's Greatest Textile Industry . . . Cotton . . . Silk . . . Man-Made Fibers" Whatever happened to wool? . . OK, we were just asking.

► "Does anybody know what an Issitt's Shaker is?" we were asked in a recent press release from the Textile Institute. While admitting that we couldn't speak for everybody, we had to admit that we didn't, unless it was something for shaking Issitts, but that leaves the question of what is an Issitt hanging. Well anyway, it seems that an Issitt's Shaker is a shoddy shaker used for shaking fud. Fud? That's oily, short-fibered card waste. So now we all know.

► The more change, the more of the same thing? Not always. In TI for Mar., 1909, Editor Kittredge said, "The cotton manufacturers of the South do not feel the necessity of a protective tariff as do the cotton manufacturers of fine goods in the North, or the woolen manufacturers of the country . . ." We take that back. And T. L. Wainwright, president of the Mississippi Textile Manufacturers Association, said, "It is the unanimous opinion of all the mills of this State, and all mill operatives that I have



PRIDE!

We at Cone Mills are proud of the role our Company plays in the continuing progress of the textile industry. This has enabled us to grow into the country's largest producer of denims and cotton flannels and one of the more important producers of corduroys, drills, twills, jeans, suedes, towels, wash cloths, print cloths, poplins, plisses, sateens and coverts. Wherever America shops for the finest fabrics, Cone fabrics will always be at the top of the list.

"Where fabrics of tomorrow are woven today."

CONE®

CONE MILLS CORPORATION

Executive Offices: GREENSBORO, N. C. • Selling Organization: CONE MILLS, INC., 1440 Broadway, New York City

ACTUAL PRODUCTION FIGURES

Prove "Coordinated Production" Pays with the . . .

Figures from mill after mill prove the new D&F 84" Card can double or triple your production.

D&F Model L 84" WOOLEN CARD

Time-study, production records offered by a score of Textile Mills, operating with the D&F "Coordinated Production" plan, now substantiate Davis & Furber claims of outstanding production, yield and quality from the NEW D&F 84" Woolen Card.

Figures from all of these mills indicate that you too can get *two, three* or *even more* times production per Card in your own mill from the new D&F "84." These results come from the following D&F design improvements:

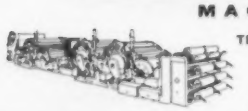
a) **increased effective carding area.**
b) **easy *infinite adjustment* of roll speeds, gauge settings and draft control.**
c) ***Greater percentage of adjustments with no shutdown.***
d) ***convenience and ease of adjustment promote maximum use to any desired balance of efficiency and quality.***
e) ***higher yield by waste reduction.***
f) ***Card Clothing custom designed to fit specific needs.***

Production figures and design improvements are incorporated in a table and illustrated in a brand new **D&F NEWS QUICK REVIEW,** just off the press. It outlines the complete story in simple visual forms as shown above.

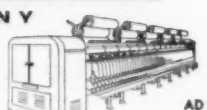
Send for your copy now. This complete picture of practical wool carding can be readily adapted to fit *your* production through the long established Davis & Furber "Coordinated Production" plan.

Call or write us now at North Andover or Charlotte.

DAVIS & FURBER
MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina



AD 12-4

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

SHORTS & REMNANTS

talked with, or had expression from, that the recent child labor law passed by the Mississippi legislature was most radical and unjust alike to the mills and to the employees." The legislature had passed an act prohibiting the employment of children between the ages of 12 and 16 for more than 10 hours in any one day or 58 hours in any one week. Maybe we should think twice before speaking when history is listening.

► We haven't brought you up to date on the snuff situation for several years now, but a New England friend sends a clipping from a Boston paper with all the latest statistics. According to this report, something like 34 million pounds of snuff was sniffed, snoosed, sucked, or chewed last year in the U.S. The paper pays tribute to the part the textile industry had at one time in keeping snuff sales high, and says, "In the pre-synthetic fiber days textile mills were full of floating lint which . . . 'made your mouth feel like you'd been chewing on an old rag.' Smoking wasn't allowed in the mills and chewing gum collected the lint so textile workers turned to snuff to keep their mouths moist."

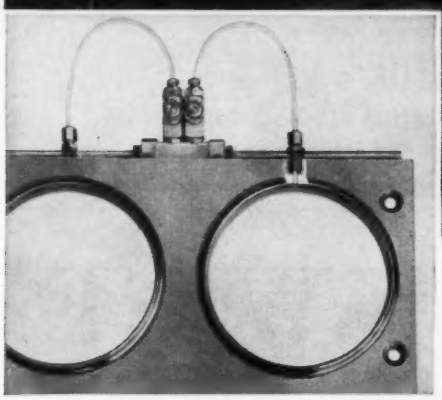
► National Association of Suggestion Systems reports with a straight face on a novel idea used to attract employee attention at the U.S. Bureau of Reclamation, Sacramento, Calif. It's called a "Genie" suggestion box. As an employee approaches the machine, an electric eve sets it in motion. A music box plays and moving printed tapes give a suggestion pep talk. At the bottom of the box, a mechanism provides a free shoe shine. We feel sure it will attract attention from employees. And maybe from the Hoover Commission.

► Among readers requesting extra copies of TI's index for 1958 are **John G. Anderson,** pres. and gen. mgr., Circle Bar Knitting Co., Ltd., Kincardine, Ont.; **L. L. Walmsley,** Am. Viscose Corp., Marcus Hook, Pa.; and librarians from ITT, Charlottesville, Va., and Mississippi U.

We mustn't have made it clear that free reprints of the *index* are available; several subscribers sent in requests for long lists of reprints of *articles* that were indexed. We can

(Continued on page 28)

Davis and Furber builds in *Lincoln* Power Lubrication to assure top equipment performance in the mill



Read what this leading textile machinery manufacturer says about *Lincoln* Power Lubrication of Spinning Frames

"Only Controlled Automatic Lubrication applied correctly to the Spinning Ring can assure the proper amount of uniform traveler drag on the yarn, plus a maximum ring and traveler life at known speed ranges.

"After a great deal of experimenting and testing in ring lubrication, we have chosen and recommend the Lincoln Centralized System to do the job best on our Woolen Spinning Frames.

"Lincoln System Ring Lubrication is one more advanced design feature in the Davis and Furber Woolen Ring Spinning Frame that adds up to better spinning with less end breakage, high spindle speeds and more uniform yarn twist."

Increase yield... cut operating costs

Lincoln Centralized Power Lubrication Systems apply viscous or fluid lubricants through sealed lines to all bearings on individual machines—or automated production lines. Lubricant is supplied under pressure at predetermined time intervals ...unerringly...automatically...while the textile processing machines are in operation.

It will pay you to install Lincoln's low-cost systems on your existing equipment...and specify Lincoln when you're ready to purchase new textile machinery. **Call your nearby Lincoln Distributor. Write now for Bulletins 811 and 806R.**

Lincoln

LINCOLN ENGINEERING COMPANY
Division of The McNeil Machine & Engineering Co.
8742 Natural Bridge Avenue • St. Louis 20, Missouri

DAVIS & FURBER

relies upon

HARWOOD BRAMWELL® FEEDERS

engineered to suit the

"Coordinated Production" Requirements

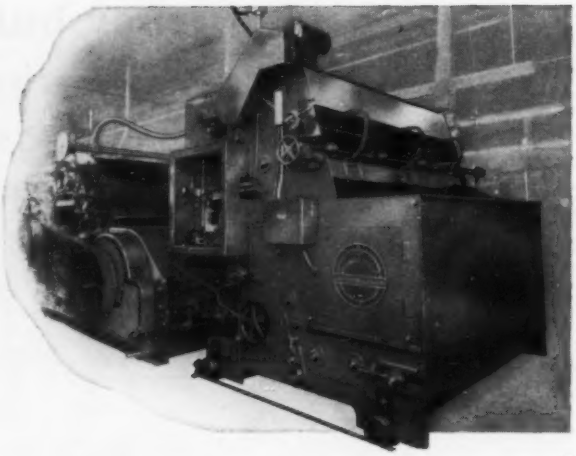
of D & F Model L Woolen Cards

Bramwell Feeders are important factors in the "Co-ordinated Production" performance of Davis & Furber Model L Carding Machines.

Uniformity of web, top quality roving and maximum yield depend upon even and reliable feeding of the Card breaker section. Standard equipment for all D & F Cards, Harwood Bramwell Feeders can be relied upon for such feeding performance.

Type G-series Bramwells include ultra-modern patented features with automatic electrical controls. They are highly flexible in handling natural fibers, synthetics or blends as required. Other types are available to fulfill particular needs or to deliver special classes of stock into the carding process.

New 84" D & F Model L Woolen Cards with Harwood Bramwell Feeders have repeatedly demonstrated their ever-increasing production potential in both yield and quality of roving. They have proved themselves as a perfectly matched combination.



Type G-2 Bramwell Feeder on 84" D & F Model L Card

Cards equipped with Harwood Feeders can be counted upon for full capacity production of first quality roving at minimum operating and maintenance costs — and for keeping the spinning room operating at top efficiency.

Your inquiries for up-to-date Bramwell Feeders will be welcomed by Davis & Furber or —

Geo. S. Harwood & Son, Inc.

50 LAGRANGE ST., WORCESTER, MASS.

"When you think of Feeders, you think of Harwood."

Finishers WISE DESIZE *with*

EXSIZE®

A 40-year record of service to the cotton finishing industry assures you that Exsize removes starch.....› FAST SAFE SURE

Carefully standardized for uniform enzyme activity, Exsize is exceptionally effective in high-speed desizing ranges due to its built-in heat stability.

Be sure—Desize with Exsize!

EST. PABST BREWERIES 1844

PABST BREWING COMPANY

Industrial Products Division • Merchandise Mart

Chicago 54, Illinois

Fabricated and installed at Lanett Bleachery and Dye Works, Lanett, Alabama by Sims Metal Works.

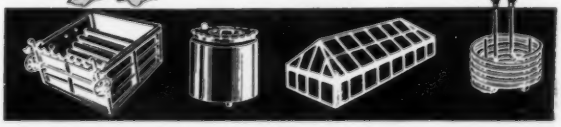
PROVEN SUPERIOR

In actual day to day operation where the real worth of machinery is tested, Sims new Stainless Steel 75 psi reversed dished head 44 Dry Cans are proven superior. They require less horsepower . . . are easier on bearings . . . and save floor space with no loss in drying surface. And, *exclusive* with Sims, this is the only Dryer where the chain drive is on one side of the can, while the steam fittings are on the other side . . . permitting maintenance of the drive without time lost waiting for steam pipes to cool.

Furnished Teflon-coated if desired.

FOR ECONOMY AND QUALITY Our modern and progressive metal-working shops, our skilled craftsmen, our know how—these are guarantees of quality. For custom tailoring of stainless steel, call, wire, or write *now*.

Sims
METAL WORKS
WEST POINT, GEORGIA

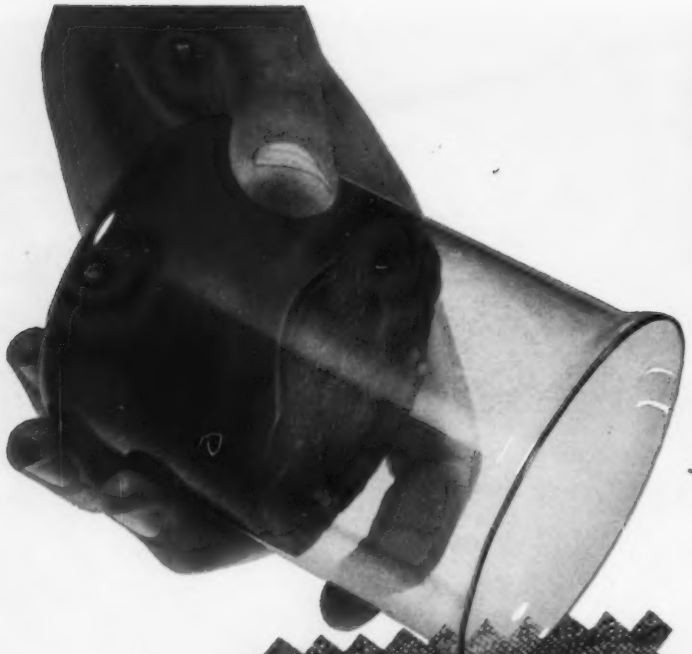


United States Supply Co.,
888 Broadway, East Providence, R. I.

Harley D. Hohm, Inc., 128 Buist Ave.,
Greenville, S. C.

Friday Textile Machine & Supply Co.,
Gastonia, N. C.

FABRICATORS SINCE 1928



MOYNOS®

even pump non-pourable pastes!

. . . and move corrosives without excessive wear!

Moynos can pump any textile liquid that can be forced through a pipe, even if they're highly viscous or corrosive.

A screw-like rotor revolving in a double threaded stator forms progressing cavities which move all fluids smoothly through the pump, including thickeners or starch size. Corrosive liquids like acid solutions, dye and chlorine do not cause internal wear, because the rotor and stator can be made of special resistant materials. Moyno is the only pump that can satisfactorily handle caustic alkali solutions without causing foaming or aerating.

Many textile mills have drastically cut downtime on mercerizing and sizing machines by installing Moynos to replace rotary pumps which wear quickly and lose capacity and suction characteristics.

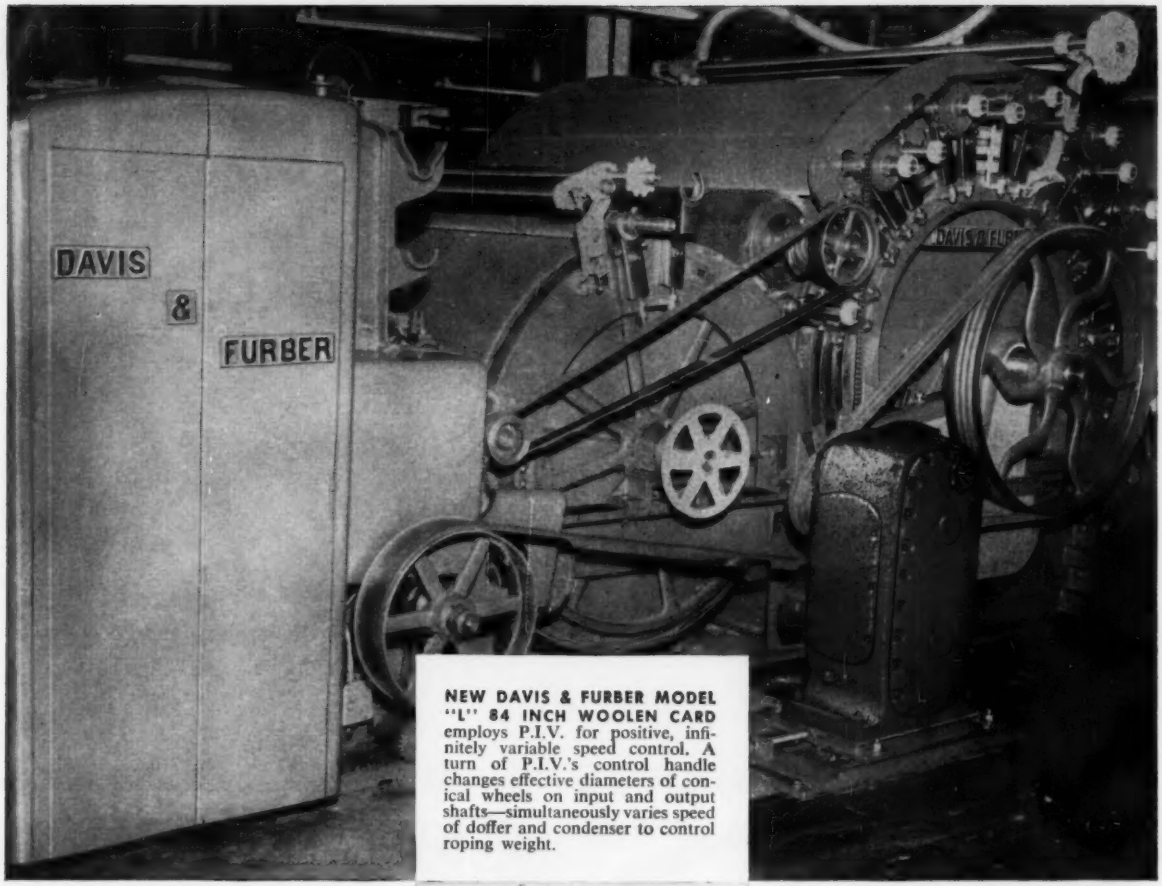
Moynos are available in capacities up to 500 gpm; pressures up to 1000 psi. No doubt there are many steps in your processing flowsheet where Moynos can cut costs and improve liquid handling. Write for Bulletin 30 TI.

R&M®

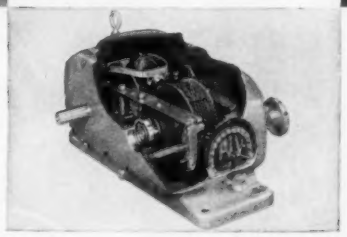
ROBBINS & MYERS, INC.

SPRINGFIELD, OHIO — BRANTFORD, ONTARIO

MOTORS FANS HOISTS MOYNO PUMPS PROPELLAIR FANS



NEW DAVIS & FURBER MODEL "L" 84 INCH WOOLEN CARD employs P.I.V. for positive, infinitely variable speed control. A turn of P.I.V.'s control handle changes effective diameters of conical wheels on input and output shafts—simultaneously varies speed of doffer and condenser to control roping weight.



Unique in operation . . .

unmatched in accuracy . . .

For stepless, slipless speed changing

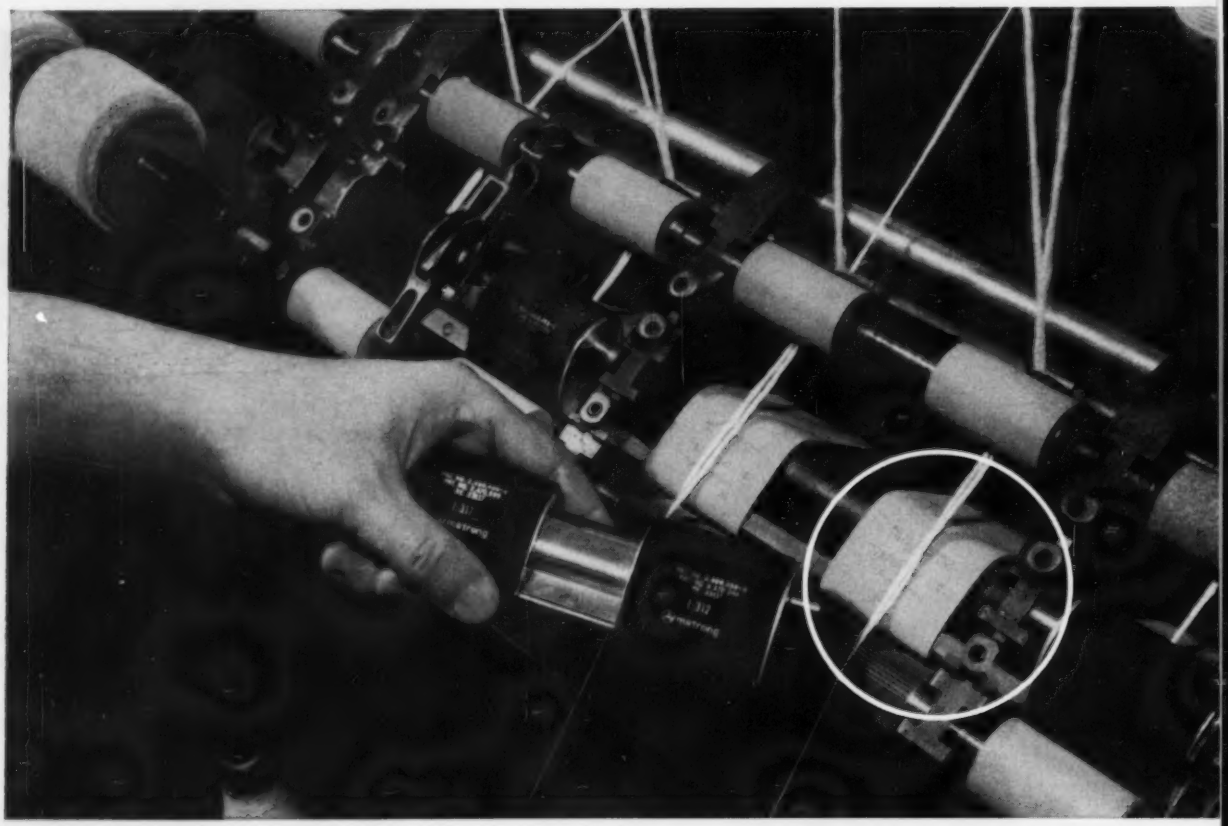
. . . there's nothing like P.I.V.

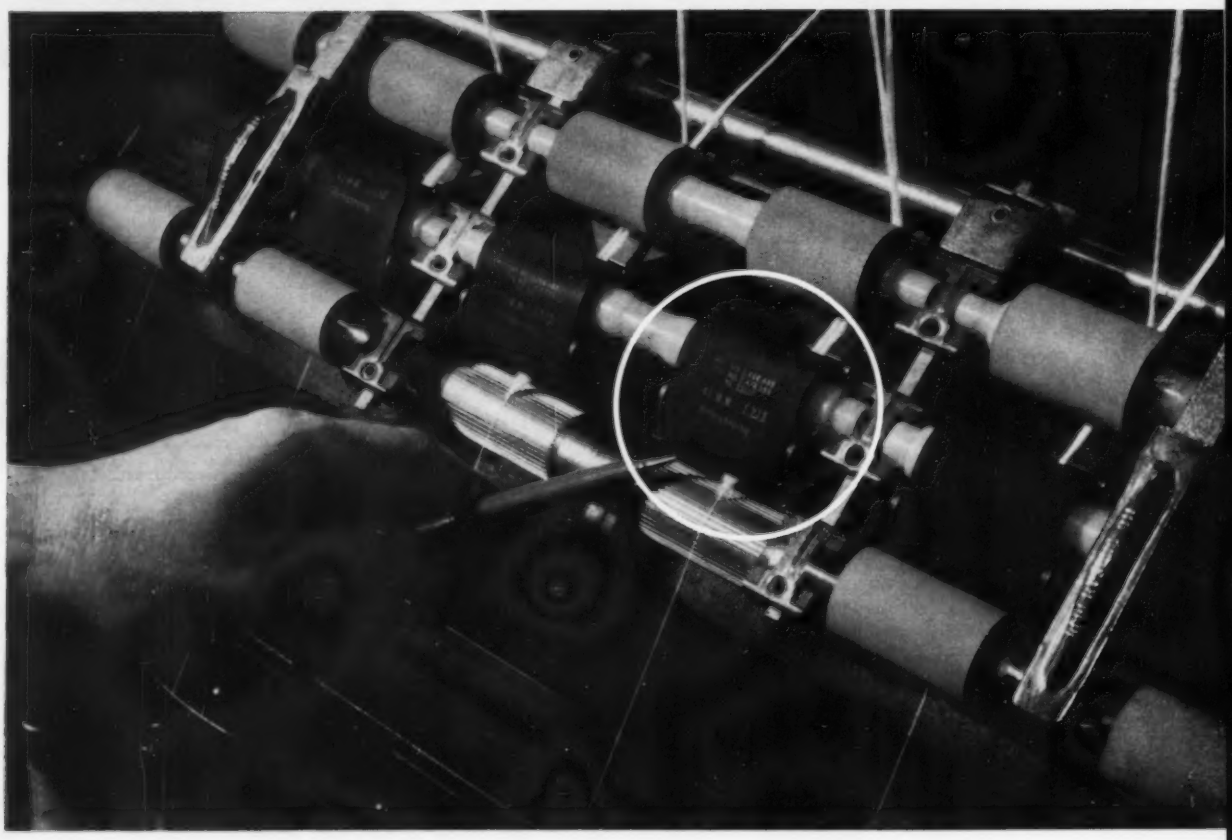
Where operations requiring variable speed control can't tolerate slip—no other mechanical drive is equipped for the job like Link-Belt P.I.V. With its all-metal, self-tooth-forming chain that maintains positive grip with radially grooved wheels, it offers a degree of accuracy . . . a level of efficiency—unique in the field. Speeds can be varied in an instant, regardless of load, without interrupting the driven machine. And P.I.V.'s all-metal construction ignores atmospheric conditions.

The complete story is contained in Book 2274. Your nearest Link-Belt office or authorized stock-carrying distributor will supply a copy.

LINK-BELT P.I.V. VARIABLE SPEED DRIVES

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Australia, Marrickville (Sydney); Brazil, Sao Paulo; Canada, Scarboro (Toronto 13); South Africa, Springs. Representatives Throughout the World. 55.054





ARMSTRONG ACCOTEX APRONS LAST LONGER, TURN OUT QUALITY YARN ON ANY SPINNING SYSTEM

There's an Armstrong Accotex Apron made to operate on any spinning system in use today —and give the sort of fiber control that produces yarns of the highest quality.

If you use a long apron system, Accotex NO-7876 is recommended for bottom apron service. This brand-new apron is made with two new rubber compounds, each with special functions in maintaining good yarn control.

The outer surface has excellent fiber control characteristics—plus high resistance to flex cracking and ozone for long life. The inner surface was compounded to give outstanding conformability to the drive roll for accurate tracking and full power transmission. Together, these compounds that make up the NO-7876 give top-notch yarn control.

Trouble-free performance is long lasting with Accotex NO-7876. Reports on test installations in many mills show excellent performance for two years or more.

If you use a close-pin double-apron system, the Accotex NO-7075 is recommended. This apron was the first to use the two-compound principle for spinning aprons. Like the NO-7876, two different compounds give the inner and outer surfaces the performance characteristics each needs.

All Armstrong Accotex Aprons have a strong interliner of cotton cord which prevents stretching or curling while retaining full flexibility.

A test installation in your mill, on your own frames, will prove to you what a big difference Accotex Aprons can make in yarn quality —and in length of service. Ask your Armstrong representative to arrange a test for you. Armstrong Cork Company, Industrial Division, 6403 Ivy St., Lancaster, Pa. All Armstrong Accotex textile supplies are available for export.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts

NOW! A better permanent finish for Wash-and-Wears with Emulsifiable AC Polyethylene

As your fresh new designs for wash-and-wears come to life, give them the superior finish and enhanced end-use performance they deserve—with Emulsifiable A-C Polyethylene!

Synthetic fibers finished with A-C Polyethylene emulsions show excellent "hand," added abrasion resistance, increased tear strength and improved sewability . . . all at a *lower finishing cost*. With Emulsifiable A-C Polyethylene in your finishes, you gain all these important advantages:

* **Better permanent wash-and-wear finishes with a wide range of excellent "hand" properties**
* **Reduced needle cutting**
* **Greater resistance to creasing**
* **Increased seam strength**

Emulsions of A-C Polyethylene are equally effective with synthetic and natural fibers, or blends. Properly formulated, they do not retain chlorine, keep whites *white*, resist scorching at elevated temperatures, and do not affect dye shades or light-fastness properties.

Make A-C Polyethylene a part of your present finishing practice! Your textile chemical specialties emulsion supplier either has an A-C Polyethylene finish or can formulate one for your specific needs. (We are manufacturers of Emulsifiable A-C Polyethylene resin, not finishing emulsions.) Investigate this superior finishing agent *now*—your fabrics deserve it! Just write or telephone today for complete information.

Allied Chemical

SEMET-SOLVAY PETROCHEMICAL DIVISION
Dept. 552-AW, 40 Rector Street
New York 6, N. Y.

Picker Overhauling Is Simple When You Depend On . . .

Aldrich Repair Service

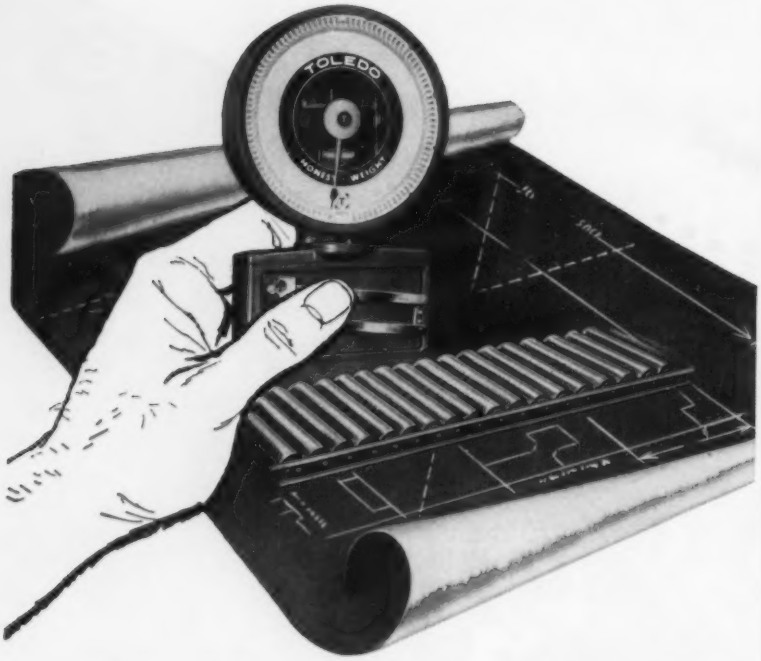
We furnish skilled men for reworking pickers, and can deliver to these men any needed parts within 24 hours in most southern states, and within 48 hours to almost any cotton mill in the United States. This makes thorough overhauling a simple matter. Anything needed for a good job can be had at once, while the machine is down for repairs.

If you do your own overhauling, this speedy delivery service is just as valuable. You don't have to wait for repair parts — they are there when you want them.

We manufacture and install complete blending, opening, and picking systems for cotton and synthetics, and cleaning systems for cotton.

AldricH MachinE WorkS

Greenwood, South Carolina



the cost-saving trend today

puts BETTER CONTROL

where it counts most!

On industry's scales, materials become money. Weight records directly affect costs, quality, inventories and customer billing. That's why it is so vitally important to put *Toledos* at all weighing points . . . where control counts most!

Major advantages that are yours with Toledos are being proven daily in plants of every size. Toledos provide more complete cost data . . . greater selection of models . . . savings in time and materials . . . welcome new simplification of records and record keeping. You can even carry Toledo accuracy directly into your accounting and inventory records, through weights printed at the scale, or transmitted on "electronic wings" for remote recording.

There are specialized Toledo units, too, for classifying, testing, counting, automatic batching and bulk weight control. So, whatever your weighing need, you need Toledos. To help you evaluate weighing efficiency in your plant, send for the Toledo weighing analysis kit. No obligation. TOLEDO SCALE, Division of Toledo Scale Corporation, Toledo 12, Ohio.

NEW TOLEDO PRINTWEIGH® "400"

. . . complete printed weight records at your fingertips!

- Prints where you wish on full 8½" x 11" forms, or on tickets; also on strips.
- Prints full figures, even when unit weights are used.
- 6 to 12 bank selective numbering, or up to 10 weight symbol keys available for weight identification. Consecutive numbering.
- Date and time may be printed automatically.
- Transmits weight data for recording by remotely located office machines, if desired.

Ask for Bulletin 2017

SERVICE Factory-Trained 200 Cities

TOLEDO®

Greatest Name in Weighing

SHORTS & REMNANTS

(*Continued from page* 18)

often supply reprints or tear sheets of articles that appear in TI, but the supply is usually very limited. We meant that reprints of the index itself are available, and we still have a few copies left.

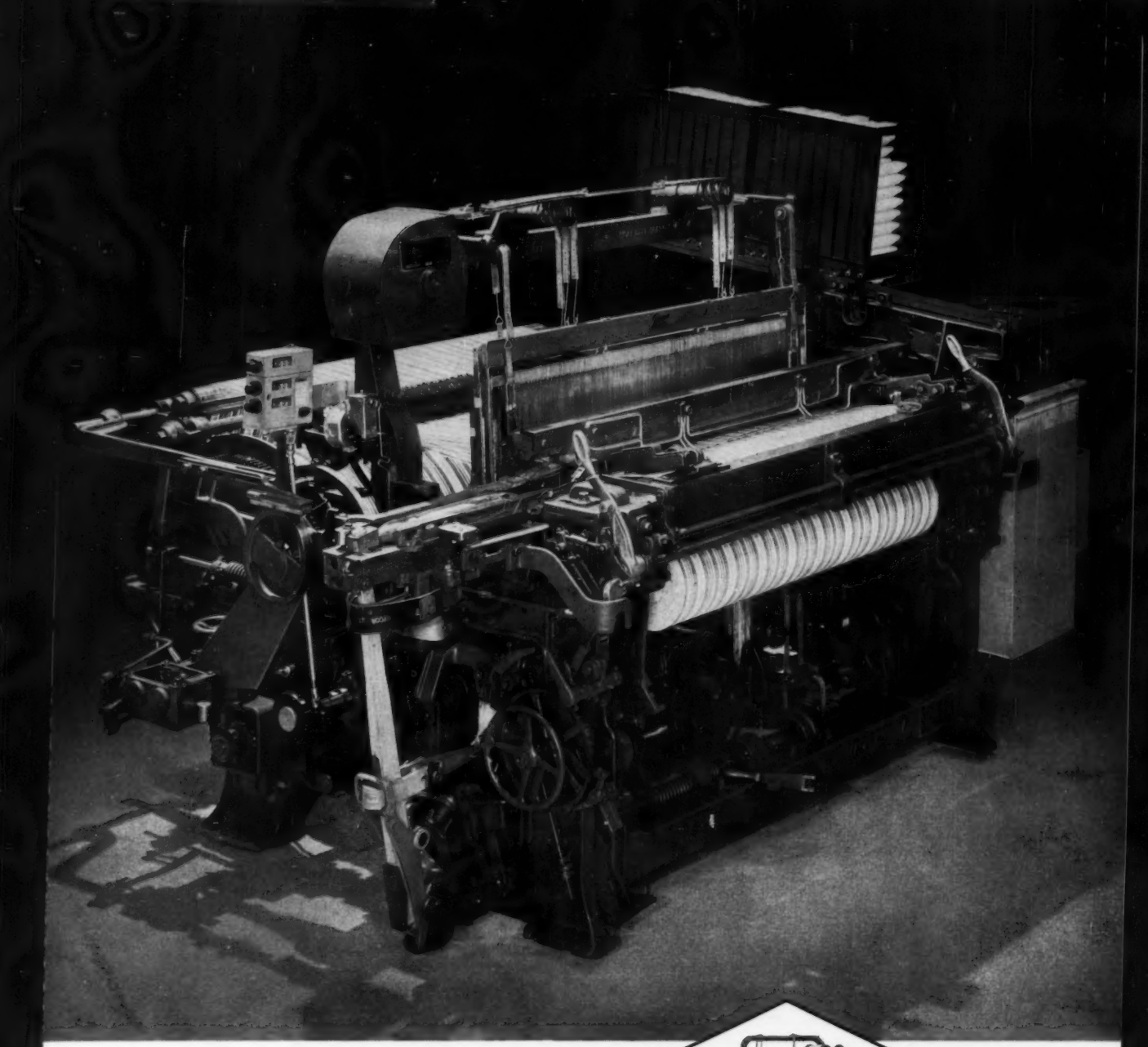
► For Civil War buffs, we recommend a new book which also has a textile flavor. "Red River Campaign," by Ludwell H. Johnson, is about the Red River expedition of 1864, one of the most destructive of the Federal campaigns. It's a study of the influence of cotton on Union politics and strategy. The John Hopkins Press, Baltimore, Md., is the publisher. and it sells for $5.00.

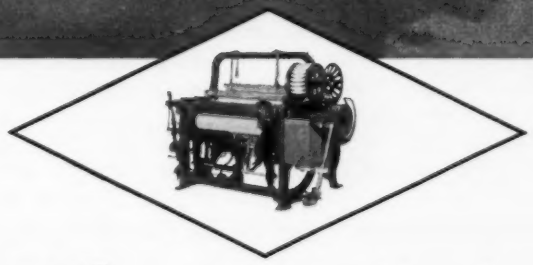
► A letter from **L. C. Inglett,** Houston, Tex., was addressed, "Editor, Cotton, Atlanta, Ga.," and arrived promptly. Mr. Inglett writes to "Cotton" for information on sources for books on Dacron, nylon, Orlon,, rayon, and silk. As TEXTILE INDUSTRIES, we were able to tell him.

► "Wash-and-Wear" continues to be a hot topic, with 40% of cotton apparel fabrics given a wash-and-wear finish in 1958, according to National Cotton Council estimates. And TI's special wash-and-wear section (Nov. '58) continues to draw reprint requests. Asking for from one to a dozen were **Peter Benjamin,** purch. dept., United Merch. & Mfrs., Inc., NYC; **Jacob K. Frederick, Jr.,** chairman, div. of textiles, Lowell (Mass.) Technological Inst.; librarian, research div., West Point Mfg. Co., Shawmut, Ala.; **D. Ward,** asst. ed., *Skinner's Silk & Rayon Record,* Manchester, Eng.; **H. I. Vale,** asst. purch. agent, Sayles Finishing Plants, Saylesville, R. I.; **I. W. Harrison,** dev. mgr., English Sewing Cotton Co. Ltd., Manchester, Eng.; librarian, Wool Research Laboratories, CSIRO, Geelong, Australia; **Margaret S. Furry,** chemist, Ag. Res. Ser., USDA, Wash., D. C.; **D. P. Feyler,** Am. Viscose Corp., Marcus Hook, Pa.; and librarian, Du Pont Co. of Canada (1956) Ltd., Kingston, Ont.

► And **Pat Hughes,** Pacolet (S. C.) Yarn Mills, gets article on "Draft Distribution on J-3 Roving," but it was May '54 and not Mar. '53; **Wm. D. McCarney,** Keasbey & Mattison Co., Ambler, Pa., gets a copy May

(*Continued on page* 32)





Obsolescence is natural . . . in textile machinery because of continual research and development • Modern Draper looms with countless new improvements save time and money in weave sheds throughout the world • New Draper looms keep your mill in a competitive position in todays changing markets.

DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N.C. • SPARTANBURG, S.C.

major supplier of chemicals for the textile industry

CARBON DISULFIDE exceeds 99.99% purity. Stauffer was the first—is still the largest—producer of this essential chemical. Shipped in tank cars of 8000 and 10,000 gallons from Bentonville and Roanoke, Va., Lowland, Tenn., LeMoyne, Ala., Chester, Pa., Perry, O. and Richmond, Cal.; in 5, 10 and 55-gallon drums from LeMoyne and Richmond.

SODIUM HYDROSULFIDE in aqueous solution of high purity and highest practical concentration in tank cars of 8000 and 10,000 gallons from Chester, Pa., Roanoke, Va., Lowland, Tenn., and Los Angeles, Cal.; in 55-gallon drums from Chester and Los Angeles; in tank trucks and drums from Los Angeles.

CAUSTIC SODA of 50% and 73% liquid Rayon Grade is shipped in tank cars of 8000 and 10,000 gallons from Niagara Falls, N. Y.

SULFURIC ACID is available in commercial grades of 77.67% to 122.5% H_2SO_4; as Oleum of 15% free SO_3 to 100% liquid SO_3, and as regenerated, water-white 98% H_2SO_4. Shipments in barges, tank cars, tank trucks, drums and carboys from many points in the South, Mid-west and West.

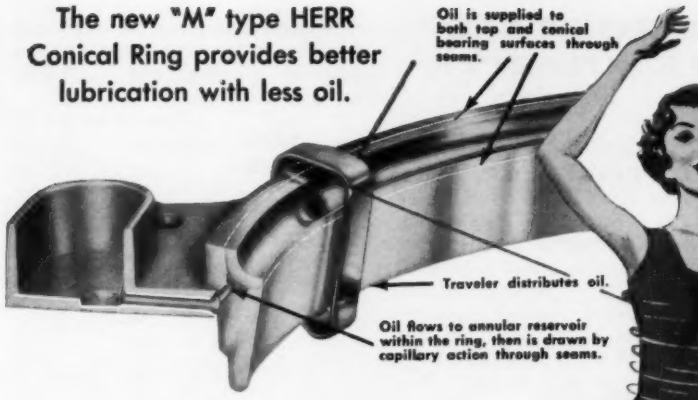
For continuous, dependable, flexible supplies of textile chemicals . . . make your arrangements with Stauffer.

STAUFFER CHEMICAL COMPANY

380 Madison Avenue, New York 17, N. Y.
Prudential Plaza, Chicago 1, Ill.
636 California Street, San Francisco 8, Cal.
824 Wilshire Blvd., Los Angeles 17, Cal.

Stauffer CHEMICALS SINCE 1885

The new "M" type HERR Conical Ring provides better lubrication with less oil.

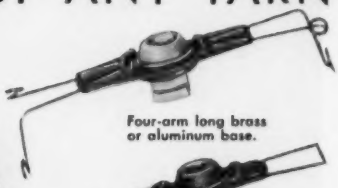

Oil is supplied to both top and conical bearing surfaces through seams.
Traveler distributes oil.
Oil flows to annular reservoir within the ring, then is drawn by capillary action through seams.

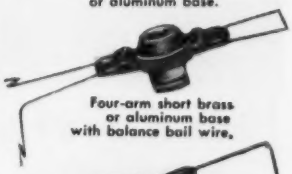
with HERR.

New "M" type

Conical Rings and Flyers

CORRECT SPINNING OR TWISTING OF ANY YARN

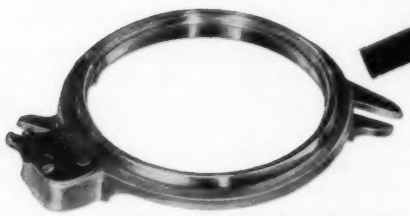

Four-arm long brass or aluminum base.


Four-arm short brass or aluminum base with balance bail wire.

Two-arm, light long aluminum base.

For spinning of medium to light counts of yarns.

Special pollywog flyer for tire cord and heavy yarns.


For spinning and twisting of medium and heavy counts of yarns.

In the mad rush to meet the popularity of knitted tights — the most extraordinary in years — the yarns made with Herr Conical Rings and Flyers are helping manufacturers meet high production operation with garments that have just the right stretch and fit. Tights made of HELANCA stretch yarns, produced with Herr equipment, have the curvy, stretchy, sleek look that brings the highest prices.

Herr Flyers produce light tensions at high speeds for accurate twist and yarn control.

New "M" Type Herr Conical Rings are self-lubricating with minimum oil consumption and long traveler life. Result is clean yarn, especially valuable in handling new bulk or stretch yarns.

Let HERR Engineers solve your spinning and twisting problems.

HERR®

MANUFACTURING CO., INC.

310 FRANKLIN STREET, BUFFALO 2, NEW YORK

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES

for buyers of Textile Machinery

Do we need new spinning? What are the best frames in the world for us? How many pounds more will be produced per shift? Can we handle these new fibres? What count? In what space? By what labor? At what RPM? By how many spindles? At what price each? How much will new spinning save us?

Armed with a quotation from Platt Bros. (Sales) Ltd. you are confident that you have all the facts to make an informed decision . . . A factory technician has surveyed your mill. An engineering group has analyzed your needs and made recommendations. The top management of the world's largest manufacturer of textile machinery has reviewed these proposals and stands behind them. You have a complete portfolio of facts. What does it cost to be so prepared? Nothing. When you are investigating new preparatory machinery, use Platt's regular service.

Manufacturer:
PLATT BROS. (SALES) LTD.
Oldham, England
Marketing the textile machinery of Platt Bros. & Co. Ltd., Howard & Bullough Ltd. & Dobson & Barlow Ltd.

Agents:
ATKINSON, HASERICK & CO. INC.
Framingham, Charlotte, Greenville, Philadelphia & Bradford, Eng.

SHORTS & REMNANTS

(*Continued from page 28*)

'58; **R. E. Kinney, Jr.,** SKF Industries, gets two copies "Top Drive Filling," Sept. '58; **Michael J. Grimes,** Pres. Waldon Textile Mills, Inc., Miami, Fla., wants slashed yarns on beams; "Norsk Tekstiltidene," Bergen, Norway, publication, gets copy of the Mar. '58 issue of our "excellent" journal; and **C. E. Hicks,** V.P. Nebel Knitting Co., Charlotte, N. C., gets reprints on "Training Seamer Operators" Apr. '53.

Appreciation

". . . wish to thank you and extend my appreciation for this fine article on our bleaching operations ['Manufactured Blondes,' Jan., p. 98]."

RAY J. STECKER
Pres., Ray J. Stecker
Hair and Wool Merchant, Inc.
Salem, Mass.

". . . You did indeed present this paper ['Starting a Quality Control Program,' Jan., p. 70] in a very nice manner . . ."

NORBERT L. ENRICK
Head, Statistics Sec., ITT
Charlottesville, Va.

Likes Posters

". . . like very much to have 10 extra copies of Poster 29. We have found them to be most helpful and an outstanding feature of your magazine . . ."

LEM COLEY
Personnel Dir.
Russell Mfg. Co.
Alexander City, Ala.

"Mystery" Rug Stains

". . . article [' "Mystery" Rug Stains due to Water Spills, Lab Technicians Finds,' TI for Jan., p. 107] is extremely timeful as far as various carpet problems are concerned . . . Advise where reprints are available in quantity . . ."

GEORGE G. GALBRAITH
Merch. Mgr.
Suwanee Carpets, Inc.
Chattanooga, Tenn.

Details available from National Institute of Rug Cleaning, Bethesda, Md., who supplied information for our article.

Wants Engraving Equipment

". . . One of our important customers is seriously interested in purchasing a large size plant for engraving of copper rollers for roller printing machines . . . recommend . . . American manufacturers . . ."

S. H. BHAGWATI
Assoc. Textile Engineers
Bombay, India

Needs Help

冠全球織造廠有限公司
香港深水埗元洲街三一八號
電話五七四三四
電報掛號〇五八五

Sorry, but we haven't published such a list in recent years. Can any of our readers help?

Slitting and Sewing

". . . machine we are deeply interested in . . . slitting the front of a cardigan and sewing the tape on both sides . . . simultaneously [TI for Sept., 1958, p. 149]"

RONALD C. YARN
Director, Koon Chuen Kow
Knitting Factory Ltd.
Hong Kong

It's called a "Trim Master," and is made by Ginsberg Machine Co., NYC.

Miscellaneous Wants

Machine for cutting synthetic-fiber fabrics and sealing edges simultaneously—**K. Hirose,** C. Itoh & Co. (America) Inc., NYC.

Trends in blanket production and consumption — **Richard L. Edsall,** marketing consultant, Montreal, P. Q.

Reprints on canvas and duck — **Carlos Chambon,** Celanese Mexicana, S. A., Mexico, D. F.

Information on TQCA meeting—**Felix C. Staedli,** plant controller, Liberty (S.C.) Mills division, Mohasco Industries, Inc.

Maker of "Monocleaner"—**Gerhard Gellerman,** Mt. Vernon, N. Y.

Information on Helanca yarn—**Philip White,** White Knitting Mills, Los Angeles, Calif.

Further information on Strobotac—L & L Knitting Mills, Inc., Brooklyn, N. Y.

► The dictionary says a "mugwump" is an independent in politics. We heard it this way: "A mugwump is a fence-straddler who has his mug on one side and his wump on the other."

► See you in April with a special feature on knitting, including a preview of the Knitting Arts Exhibition.

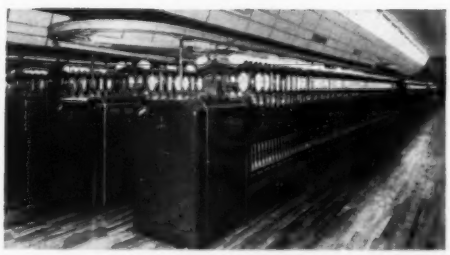
...the satisfaction of seeing your decision to buy Platt machinery justified

When you receive machinery does it always do the job you thought it would?

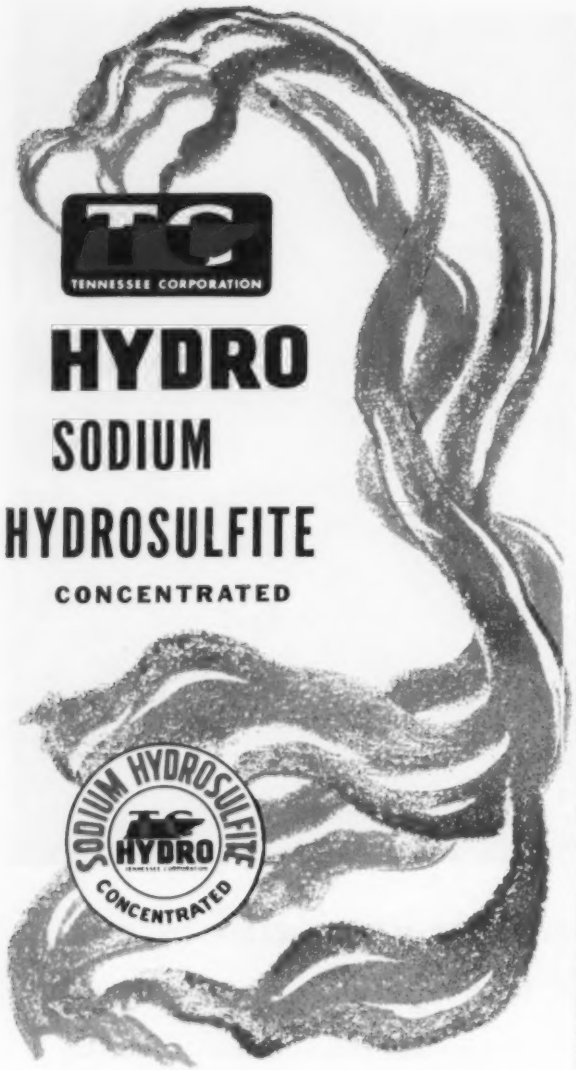
Purchasers of machinery from Platt Bros. (Sales) Ltd. *know* how many more pounds will be produced per shift. By what labor. In what floor space. At what price per spindle and how much this new spinning will save per year.

They have studied samples of their own stock run on the type frames they ordered. They have in their possesion a complete laboratory analysis of the results — spinning tests on any of the new type synthetics they contemplate running, regularity tests, strength and count tests, twist tests, etc. and these tests form a part of the warranty made by the world's largest manufacturer of textile machinery. We invite you to secure such a portfolio of facts before making any decision to purchase new spinning, roving, carding or opening machinery. This is part of our regular service.

Manufacturer: **PLATT BROS. (SALES) LTD., Oldham, England**
Marketing the textile machinery of Platt Bros. & Co. Ltd., Howard & Bullough Ltd. & Dobson & Barlow Ltd.
Agents: **ATKINSON, HASERICK & CO. INC., Framingham, Charlotte, Greenville, Philadelphia & Bradford, Eng.**



The new Platt M.R. 3 Ring Spinning Frame is meeting all competition on the basis of quality and cost. Good engineering and careful attention to the requirements of new spinning techniques have produced a new frame mechanically simple and reasonably priced. It is an all-count, all-purpose machine to handle varying raw materials. It is capable of producing wide ranges of yarn characteristics. A greater proportion of the operator's time is spent on productive work and considerably less on cleaning and maintenance. Before purchasing new frames, it will pay you to get competitive quotes on Platt equipment.



HYDRO SODIUM HYDROSULFITE

CONCENTRATED

TC-Hydro is a dry, white, free flowing, crystalline powder of uniform size and structure. It is dust free, assuring highest stability and uniformity.

As Miners Of Sulfur Bearing Ores— We have utilized our basic position in Sulfur Chemistry to produce another product of highest purity and quality for use in the Textile Industry.

When You Need it— Our production is located in the heart of the Southern Textile Industry which permits us to render over-night delivery service to most Southern points—also small lot shipments are available from centrally located warehouses.

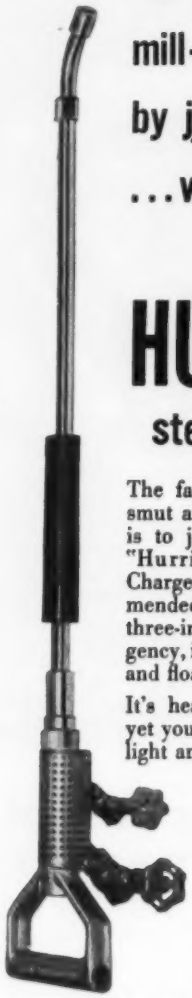
Phone, Wire or Write for literature and test samples if desired.

TENNESSEE TC CORPORATION
TENNESSEE CORPORATION

NOW...

mill-wide cleaning by jet-blast ...with the new Oakite HURRICLEAN®

steam-detergent gun



The fast, new way to remove lint, oil, smut and grease from textile equipment is to jet-blast it loose with the Oakite "Hurriclean" steam-detergent gun. Charge this powerful gun with recommended Oakite detergent and you get three-in-one cleaning power: heat, detergency, impact. Then twist a valve to rinse, and float off all the loosened soil.

It's heavy-duty mechanized cleaning... yet you've never handled a unit so safe, light and easy.

SAFE Steam travels in an inner, insulated tube. Outer tube conveys the cool detergent solution. Mixing takes place at the nozzle. This keeps the gun always cool to the touch, always safe.

LIGHT Weighs a mere 6¼ lbs.

EASY A twist of the tube grip changes direction of the spray. No dragging and kinking of hose lines. Cleaning 'from under' is a cinch.

You'll find that the Oakite "Hurriclean" gun brings big savings in time and money, while doing a far better cleaning job on looms, spinning frames, tenter chains, dye kettles, slasher drums, drying cylinders and other equipment, and, of course, on floors and walls.

Ask your local Oakite man to let you try out the "Hurriclean" steam-detergent gun. Or write for details to Oakite Products, Inc., 42 Rector Street, New York 6, N. Y.

OAKITE
50 1909-1959 SCIENCE
years' leadership in industrial cleaning

THE NEED: An economical, expendable tube for shipping yarn

The textile industry needed to replace heavy, permanent-type dye tubes with lightweight, non-returnable carriers to reduce the cost of transportation in shipping yarn.

Sonoco recognized this need and assigned the job to its research department for a solution. As a result, Sonoco developed an economical one-time-use transfer, or push-out, paper tube with critical dimensions and controlled stability. Not only was the initial need fulfilled, but this new carrier made it possible to greatly reduce the inventory of stainless steel dye tubes formerly required. And, in many cases, the Sonoco transfer tube saved a costly rewinding operation.

Only Sonoco, with its modern laboratory, engineering and production facilities, could have answered this need with an economical, efficient carrier. It is typical of countless cases where Sonoco leadership in the development of textile paper carriers, based on 60 years' experience, has benefited the industry. Let Sonoco help you!

SONOCO

Products for Textiles

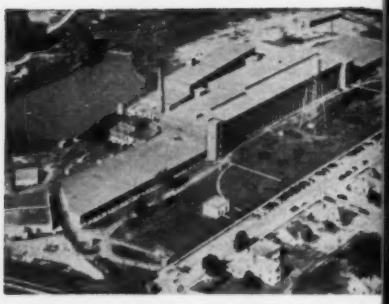
SONOCO PRODUCTS COMPANY

Main Office—Hartsville, S. C. • Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Philipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Cal. • Atlanta, Ga. • Granby, Quebec • Brantford, Ontario • Mexico, D. F.

1003

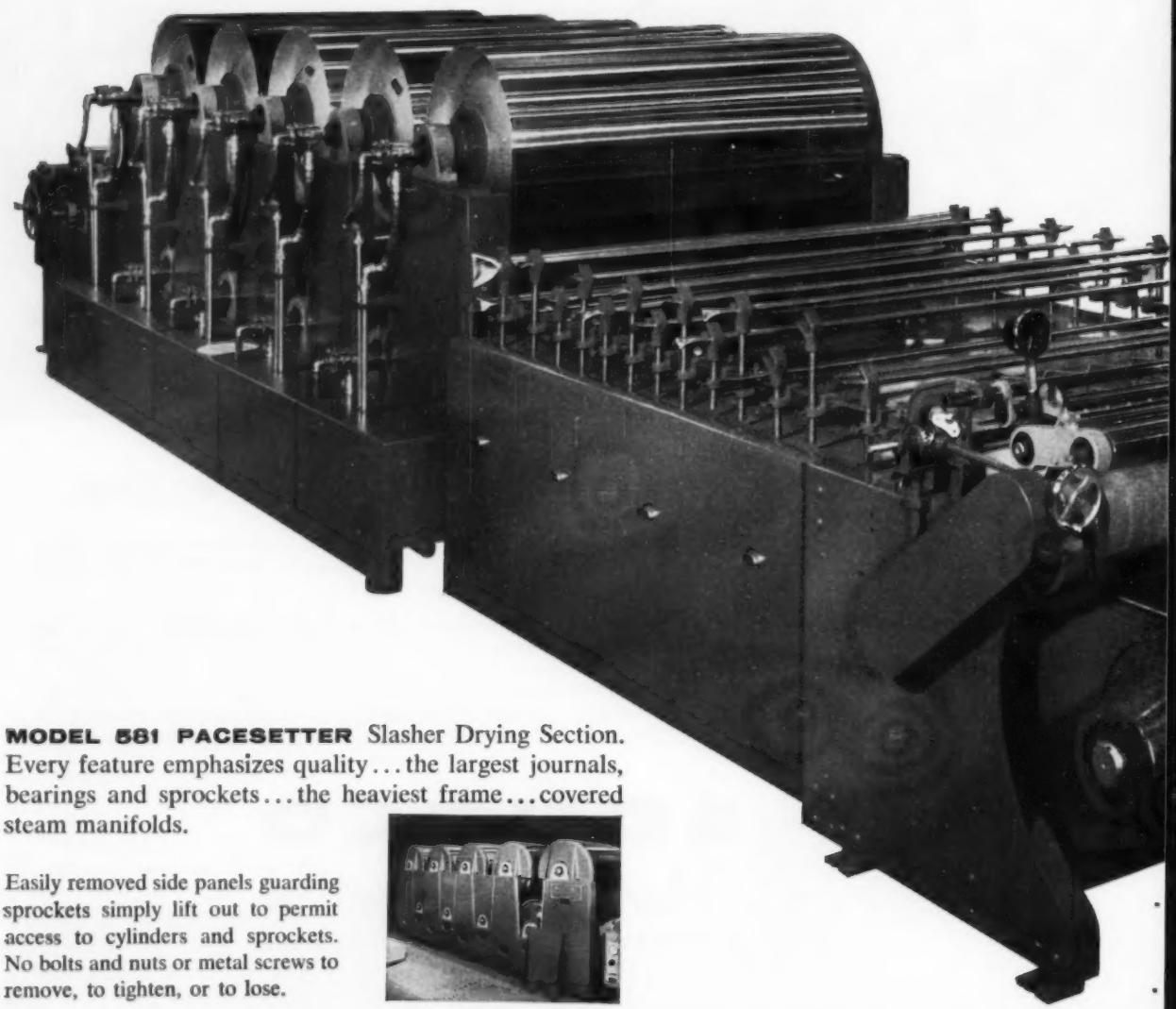
THE SPRINGS COTTON MILLS, Fort Mill, South Carolina. Six plants of Springs Cotton Mills run 29 West Point Slashers.

DUNDEE MILLS, INC., Griffin, Georgia. Three West Point Foundry Slashers replaced seven old slashers.



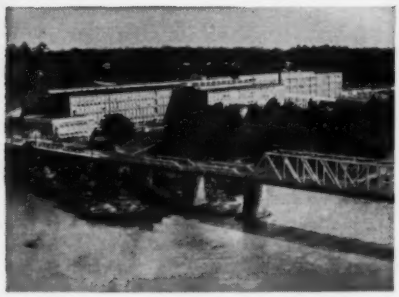
LYDIA COTTON MILLS, Clinton, South Carolina. Two West Point Foundry Slashers replaced four old slashers.

These six pace-setting textile mills are all.



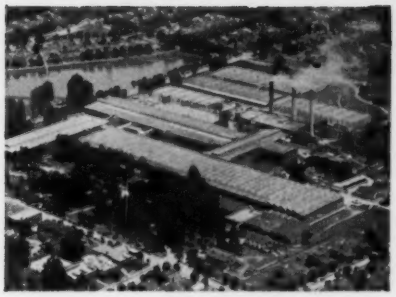
MODEL 581 PACESETTER Slasher Drying Section. Every feature emphasizes quality... the largest journals, bearings and sprockets... the heaviest frame... covered steam manifolds.

Easily removed side panels guarding sprockets simply lift out to permit access to cylinders and sprockets. No bolts and nuts or metal screws to remove, to tighten, or to lose.



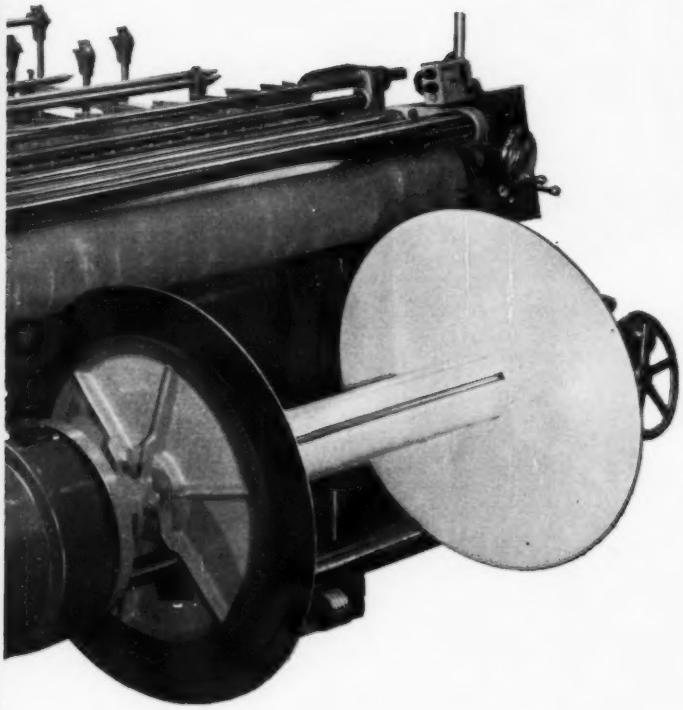
TALLASSEE MILLS of the Mount Vernon Mills, Inc., Tallassee, Alabama. Six West Point Slashers replaced nine old slashers.

PACOLET MANUFACTURING COMPANY, New Holland, Georgia. Five West Point Foundry Multi-Cylinder Slashers in this mill.



CONE MILLS CORPORATION, White Oak Plant, Greensboro, N. C. Five West Point Multi-Cylinder Slashers replace 16 old slashers.

100% WEST POINT



ALL OF THE SIX leading textile mills pictured above have 100% West Point Foundry slasher installations.

ALL OF THE SIX are now slashing their warps on fewer slashers in less slasher hours, realizing lower production costs, savings in floor space, uniform quality and reduced maintenance. In the last three years alone over 50 textile mills have installed more than 130 West Point Foundry Multi-Cylinder Slashers.

The fact that these textile leaders have chosen high-capacity West Point slashers is proof positive of the soundness of this investment.

Whether yours is a complete slasher installation or modernization of present equipment, call West Point Foundry . . . *specialists in slashers.*

WEST POINT Foundry & Machine Company

WEST POINT, GEORGIA

RUN PERFECT

Warps at Lower Cost

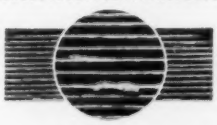
with Dayco Thoro-size Slasher Rolls

EFFICIENT SIZING is automatic with Dayco Thoro-size Slasher Rolls. Their perfectly resilient surface insures accurate, consistent metering of just the right amount of starch for smooth, clean sizing. There's no waste, for the excess is squeegeed back into the tank for re-use.

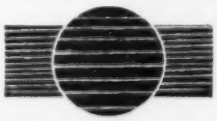
TROUBLE-FREE OPERATION gives you up to 45% greater production. Time-saving Dayco Slasher Rolls have no cover or blankets to change or become hard . . . never need warming up . . . stay in place while you're changing sets.

PAID FOR IN 6 MONTHS, through savings in time and materials, Dayco Thoro-size Slasher Rolls can be reground after a year or more of service to restore their like-new condition. This economy feature, plus the fact that they are unaffected by oils or chemicals, adds years to the life of your Dayco Rolls.

LOOK! NO LAP MARKS or flattened yarn, all due to the seamless construction of Dayco Thoro-size Slasher Rolls. The result is a flawless surface free of streaks and spots. Make your own comparison from the samples shown.



Irregular sizing denotes inadequate control of ordinary slasher rolls

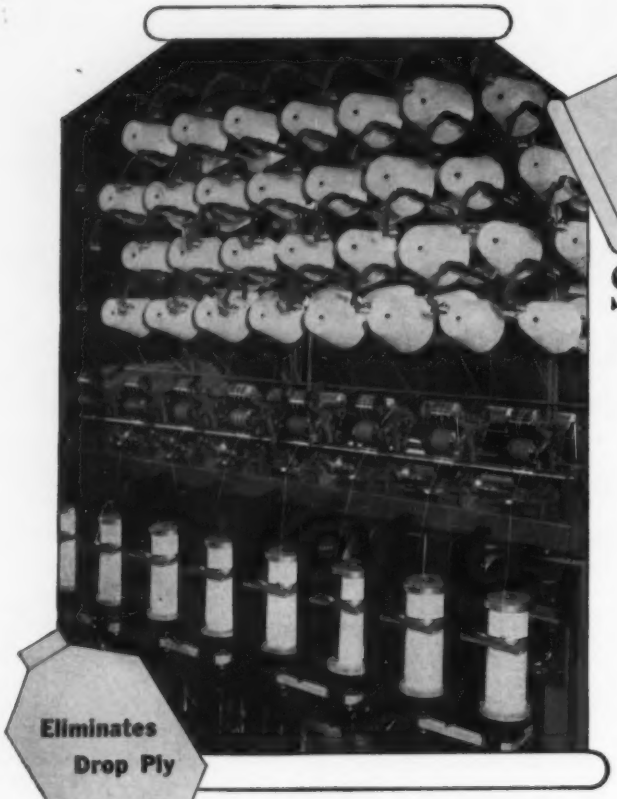


Clean, uniform sizing proves superior performance of Dayco slasher rolls

Get the full story on how you can save time and money while improving your slashing quality. Ask the Dayton Representative next time he calls or write The Dayton Rubber Company, 401 S. C. Nat'l Bank Bldg., Greenville, S. C.

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving.



6-oz. to 12 lb. Packages

Eliminates Drop Ply

For a Completely Knotless Yarn

Eliminates Roller Laps

COLLINS Presents the SAV-YARN* Twister

with Airestop Spindle Action**

the Revolutionary Stop Motion for each end in the ply

Up to 14 ply

The Airestop Spindle Action instantaneously stops the spindle blade and package whenever an end breaks or a runout occurs *without applying any pressure on the whorl or tape.* Here is an illustration of this unique Airestop Spindle Action: Spindle speed is 6500 rpm when spindle is operative. When an end breaks, the blade and package are instantaneously stopped, but the whorl speed remains constant at exactly 6500 rpm. This completely eliminates slack twist on any bobbin. This is Airestop Spindle Action.

A Completely Knotless Yarn The stoppage is so fast that a yarn break in the creel is caught before the trailing end enters the feed rolls even if the break is on the bottom creel rail—thus allowing tying or splicing of the single end without damage to the ply. Any yarn breaks cause instant stops, thus preventing licking or lashing. Knee breaks are eliminated.

The Collins Airestop Action eliminates waste and also permits increased patrolling assignments.

Other SAV-YARN Advantages Roller and ball bearings, silent chains, and a minimum of head end gearing produce extremely silent operation. The new Collins Traverse Motion*** improves lay. The new Collins FlexoArbor** Creel Bracket accommodates any length package and saves creeling time.

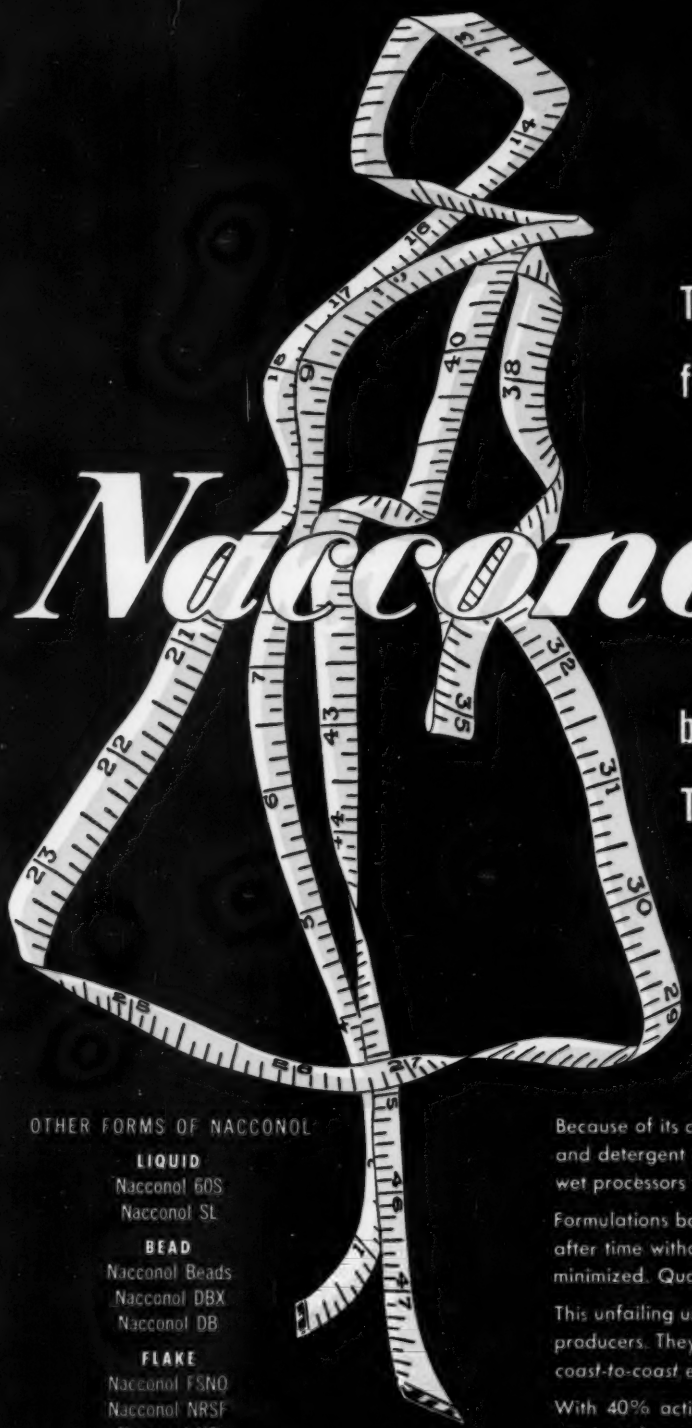
The Collins SAV-YARN Twister is used on all type yarns including textured, glass, and paper. Its features can also be used as changeovers on any Collins Ply Twister or on any other make tape-driven twister.

*Trade Name applied for
**Trade Name—Pat. applied for
***Pat. applied for

COLLINS BROTHERS MACHINE COMPANY, INC.

647 Roosevelt Ave., Pawtucket, R. I., Phone 29514 • Box 6161,
Charlotte, N. C., Phone EDison 4-1447 • Chicago • Los Angeles
Hugh Williams & Co., 27 Wellington St. E., Toronto 1, Canada

THERE IS A COLLINS TWISTER FOR EVERY PLY YARN CONSTRUCTION



Textile industry standard for Flake Detergents

Nacconol® NR

because it helps maintain Textile Quality!

Because of its consistent light color and uniform wetting, foaming and detergent action, NACCONOL NR has been the first choice of wet processors for many years.

Formulations based on NACCONOL NR can be duplicated time after time without variations in end results. Processing difficulties are minimized. Quality of finished goods is maintained.

This unfailing uniformity has special significance to multiplant textile producers. They can always depend on getting identical material *coast-to-coast* every time they buy.

With 40% active organic content assured, NACCONOL NR is consistently good money-value, too. Why not let us send samples and quote on your requirements?

OTHER FORMS OF NACCONOL

LIQUID
Nacconol 60S
Nacconol SL

BEAD
Nacconol Beads
Nacconol DBX
Nacconol DB

FLAKE
Nacconol FSNQ
Nacconol NRSF
Nacconol HG
Nacconol SX
Nacconol Z

GRANULAR
Nacconol MX Granular
Nacconol MX Unimesh

POWDER
Nacconol SW

NATIONAL ANILINE DIVISION
40 RECTOR STREET, NEW YORK 6, N. Y.
Atlanta Boston Charlotte Chattanooga Chicago Greensboro
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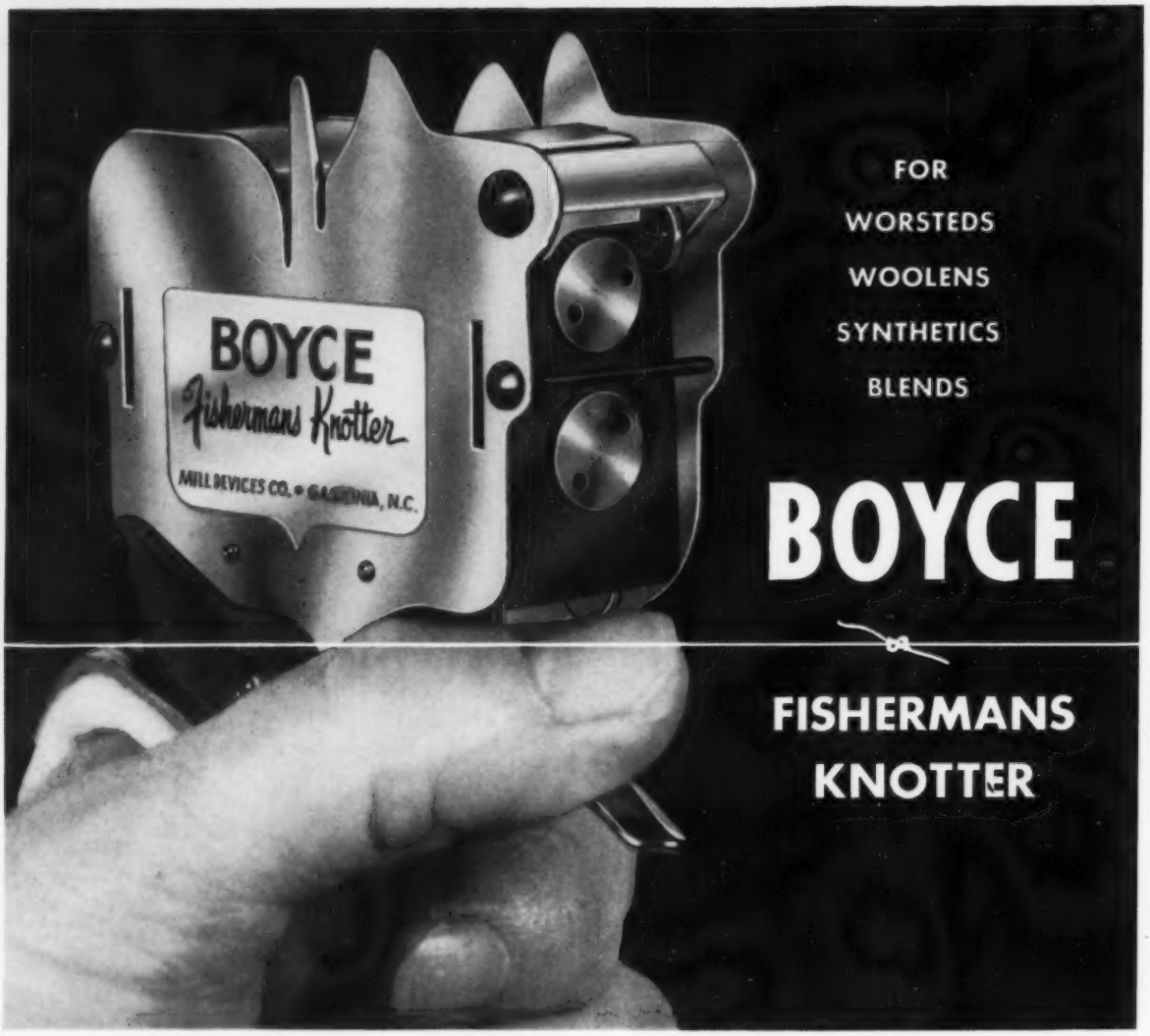
Allied Chemical

Newest addition to a famous family!



Manufactured by the metal craftsmen of Mellor Bromley and Company, Ltd., Leicester, England, this new precision instrument ties a strong, smooth "fishermans" knot—quickly, efficiently and economically—in yarns which heretofore have resisted automatic knotting. Ends are clipped clean and even—and the more tension on the yarn, the tighter the knot.

For complete information send a sample of yarn with your inquiry to:

5 MODELS FROM WHICH TO CHOOSE

MODEL L-20—5 denier to 100 denier in filament and very fine spun yarns.

MODEL L-22—30 denier to 200 denier in filament, approximately 30's in cotton and approximately 45's in worsted.

MODEL L-24—Medium counts in filament and spun yarns.

MODEL L-26—Medium to coarse counts in filament and spun yarns.

MODEL L-30—Coarse counts of filament and spun yarns.

Note: Complete repair and service facilities for all models available at our Gastonia plant.

MILL DEVICES COMPANY

A DIVISION OF

A. B. CARTER, INC., GASTONIA, NORTH CAROLINA

Exclusive Distributors in the United States, Canada and Mexico for the Boyce Fishermans Knotter

News about LUREX®

Caustic-resistant Lurex

This new caustic-resistant metallic yarn is a modification of Lurex MF (polyester-foil type).

Designed to increase your profit opportunities, it: —

- Provides a greater margin of safety against caustic degradation during cotton bleachery operations.
- Economically advantageous. Extends the use of Lurex to perform in a standard cotton bleachery cycle.
- Stands up under a full-white, continuous peroxide bleach; mercerizing; continuous vat and sulphur dyeing as well as jig dyeing.

See your nearest Lurex salesman about ordering this new caustic-resistant Lurex.

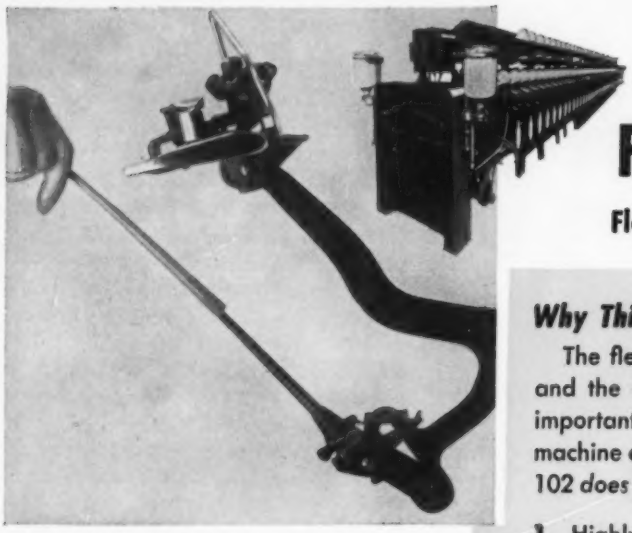
Lurex, non-tarnishing metallic yarn made only by the Textile Fibers Department of

DOW

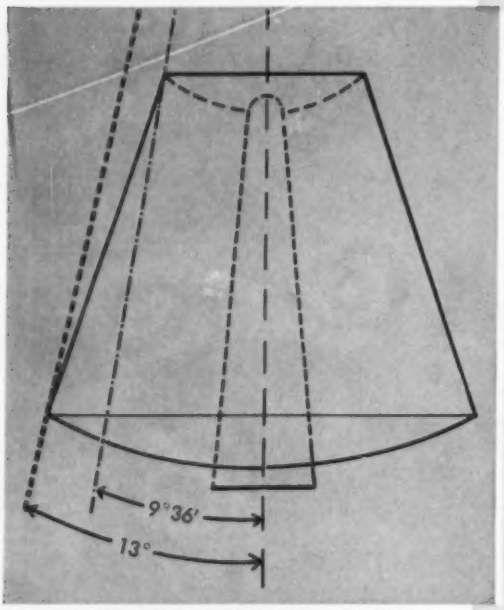
The Dow Chemical Company • *Williamsburg, Virginia* • *New York: 350 Fifth Avenue*

Boston • Camden, N. J. • Charlotte, N. C. • San Francisco

Manufacturing Affiliates in Canada: William B. Stewart & Sons, Ltd., Toronto and Montreal



TILTING BOBBIN PIN FOR SOFT TWIST COPS WHERE SINGLE BALLOON AND MINIMUM TENSION ARE REQUIRED



DRAWING OF 9°36' TAPER CONE

SLUB CATCHING AND WAXING ATTACHMENT

FOSTER MODEL 102

Flexibility — Economy — Quality Winding

Why This Machine Produces a Quality Package

The flexibility (adaptability to changing conditions) and the economy of the Foster Model 102 are very important, but they would be of far less value if the machine did not produce a quality package. The Model 102 *does* produce a quality package and here's why: —

1. Highly efficient slub catchers automatically inspect the yarn.
2. The 9° 36' convex base cone promotes free delivery on the knitting machine — prevents underwinding and "nipitis".
3. Yarn conditioning and waxing attachments give proper softness and lubrication to yarn.
4. Ribbon breaker prevents ribbon wind.
5. Idler shell on winding drum prevents burning or chafing of yarn at nose of cone. Hairline fit prevents cutting.
6. Adjustable angle of wind assures properly formed packages which hold their shape in transit.
7. Even the softest twist yarns can be wound with minimum breakage, because they can be wound with no tension, if necessary.

Learn also about the flexibility and economy features of the Model 102. Write for Bulletin A-95-A.

FOSTER MACHINE COMPANY

A Yarn Winder for Every Purpose

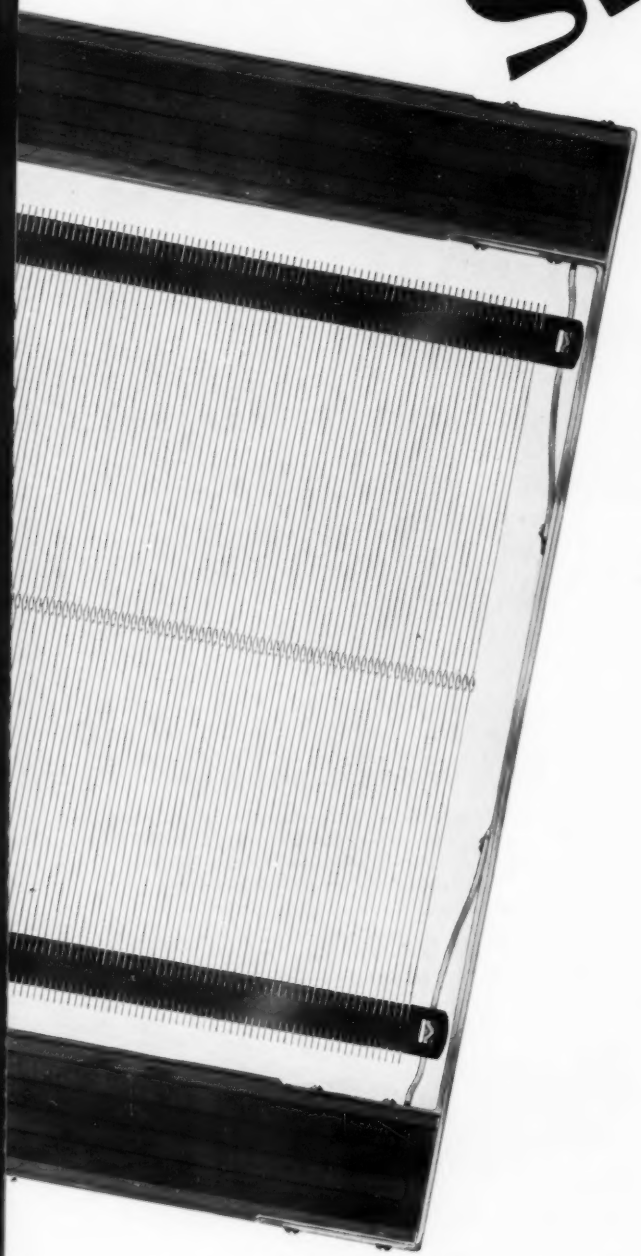
Westfield, Massachusetts, U.S.A.

Southern Office — Johnston Bldg., Charlotte, N. C. *Canadian Representative* — Ross Whitehead & Co., Ltd., [illegible] Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ontario • *European Representative* — Muschamp Textile Machinery Ltd., Keb Lane, Bardsley, Oldham, Eng.

A Member of American Textile Machinery Association

636-8

ANOTHER Stehedco FIRST!



Increased STRENGTH With the NEW DURAWELD HARNESS FRAME

Here is a PREMIUM GRADE harness frame that GUARANTEES LONGER LIFE.

Each frame stick is a lamination of strips of carefully selected high quality wood permanently bonded together for greatest strength.

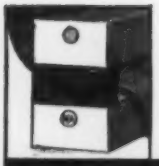
Here are a few of the many advantages:

1. **Greatest stability with less distortion during its entire long life;**
2. **Elimination of excessive wear on heddles or adjacent frames because there is no warping;**
3. **Greater holding power for hardware;**
4. **Practically no splintering due to careful selection of wood used for edges;**
5. **Elimination of weak spots by careful selection and blending of wood used in lamination.**

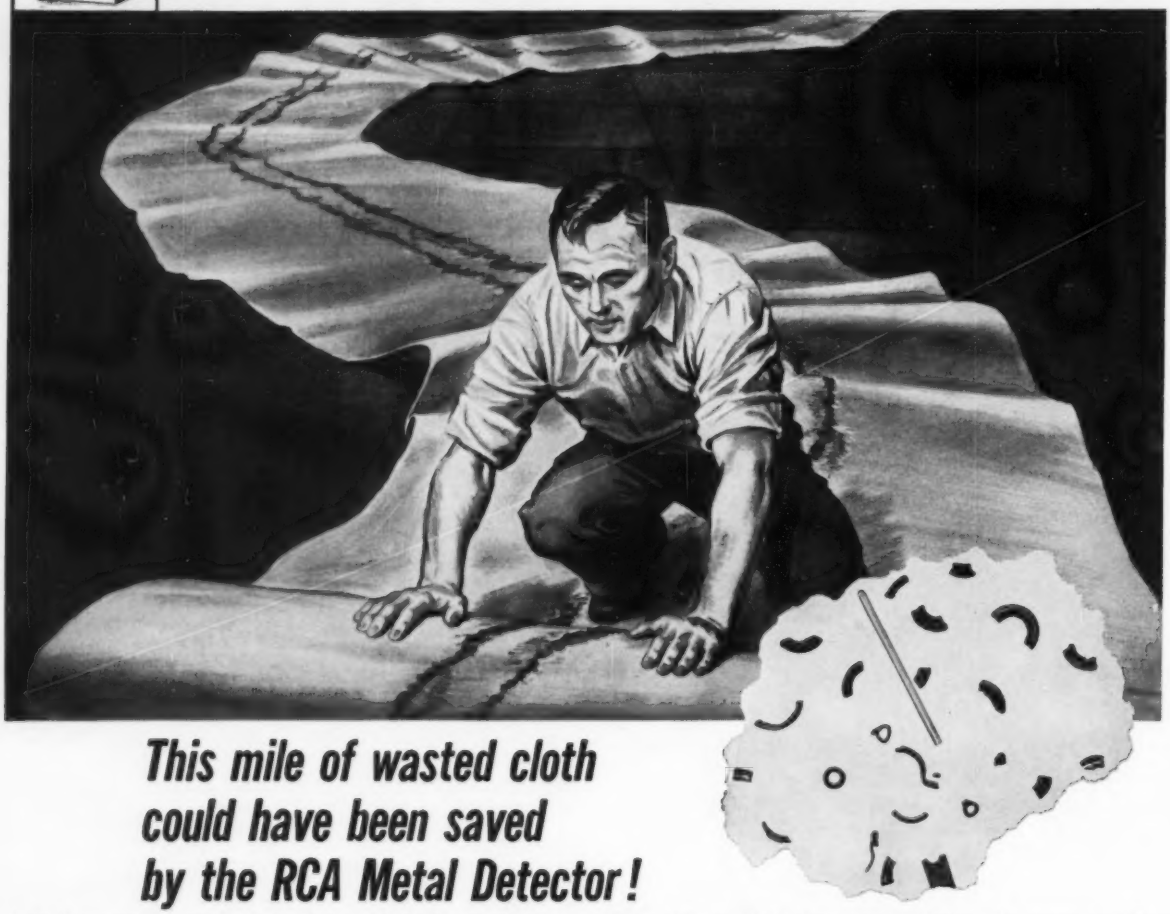
YOU OWE IT TO YOURSELF TO TRY THE NEW STEHEDCO HARNESS FRAMES

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

Other Plants and Offices: Granby, Quebec, Canada • Lawrence, Mass. • Greensboro, N. C. • Atlanta, Ga. • Textile Supply Co., Dallas, Texas • Albert R. Breen, Chicago, Ill.



...GATEWAY TO SAFETY FROM TRAMP METAL



This mile of wasted cloth could have been saved by the RCA Metal Detector!

A mill recently suffered the loss of nearly a mile of valuable cloth in one run because a sharp fragment of embedded metal had gone undetected by human eyes! The loss was staggering—and could have been prevented. With RCA Electronic Metal Detectors on the job, both magnetic and non-magnetic metals are intercepted with equal ease. Metal to be detected can be smaller than a pinhead (1mm diameter)—so sensitive is this device especially developed for textile mills.

The RCA Electronic Metal Detector can find metal hidden in non-magnetic material traveling at speeds from 15 to 1000 feet per minute. As soon as the offending metal fragment or part rides through the Metal Detector's aperture, a warning device is triggered and the traveling material is stopped.

The RCA Electronic Metal Detector is practically foolproof, has no moving parts, requires no attendant to control it, and costs much less than you might suppose. Installed under the supervision of a trained RCA technician.

FREE literature on the RCA Electronic Metal Detector for textiles will be sent to you without obligation. Write to RCA Dept. R-271, Building 15-1, Camden, N. J.

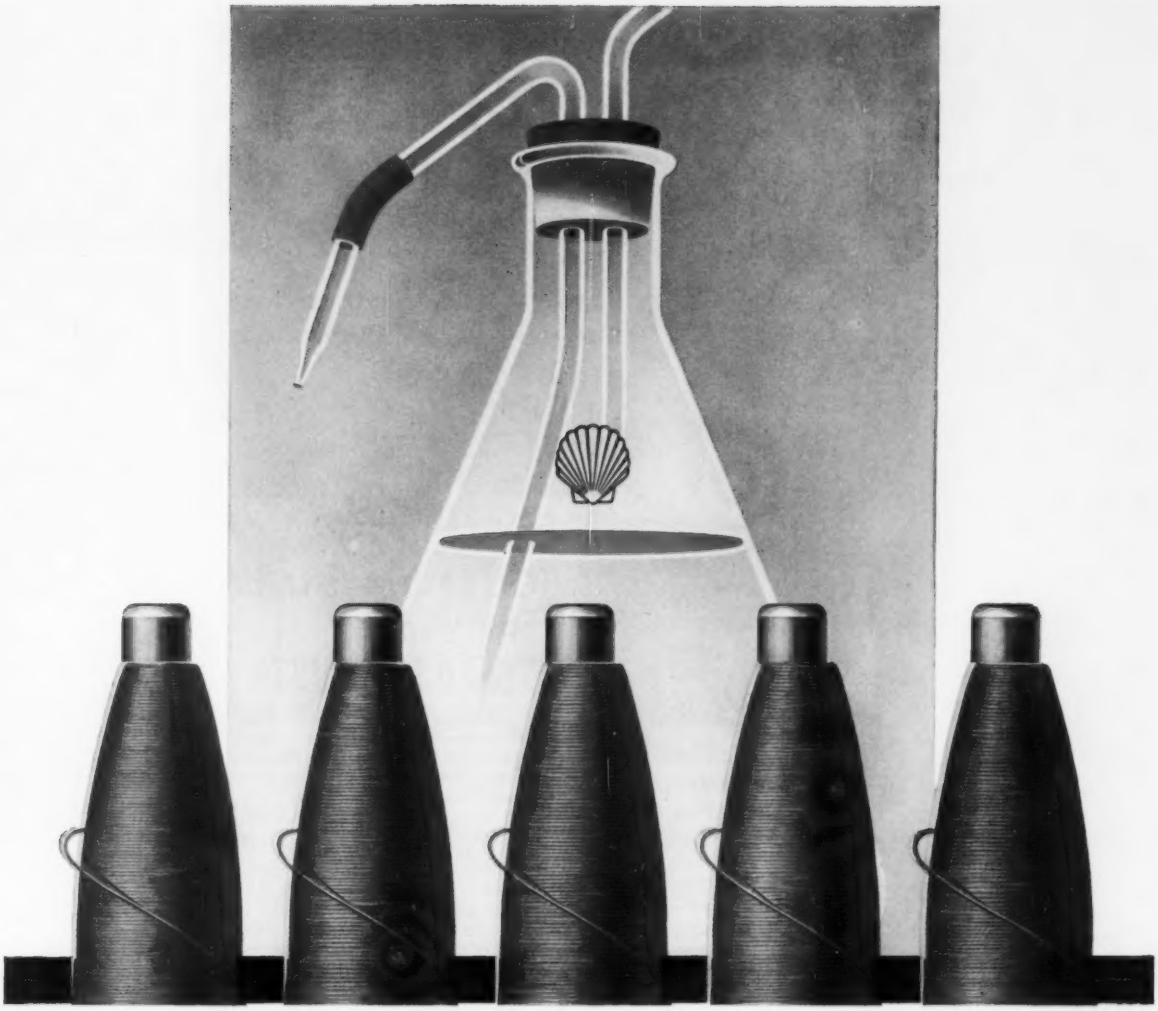
Tmk(s) ®

RADIO CORPORATION of AMERICA

CAMDEN, N. J.

In Canada: RCA VICTOR Company Limited, Montreal

RCA ELECTRONIC METAL DETECTOR



How Shell Chemical serves the textile industry

Chemicals play a vital role in the textile industry. Having the right chemical for the job helps produce *better* fabrics. Shell Chemical is a convenient, dependable source for the chemicals listed at the right.

Hydrogen peroxide serves as a rapid, economical bleach and as an oxidizer for making vat colors brighter. Acetone is a spinning solvent for acetate rayon. Glycerine is a popular moistening agent for fibers and for textile printing compositions.

Eponite® 100 is a very effective, non-chlorine retentive resin for production of minimum-care fabrics. It imparts increased wrinkle resistance to cottons and rayons and reduces rayon shrinkage to a fraction of one per cent.

• • •

A Shell Chemical representative will be glad to discuss your specific needs. Write your nearest Shell Chemical district office for samples and technical literature.

Acetone
Eponite 100
Ethyl Alcohol
Glycerine
Hexylene Glycol
Hydrogen Peroxide
Isopropyl Alcohol
Methyl Ethyl Ketone
Methyl Isobutyl Ketone
Sodium Sulfonates

SHELL CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION

Atlanta • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • New York • San Francisco
IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited, Montreal • Toronto • Vancouver

SHELL

USP PALLETAINERS®

Typical of the custom-built Textile Palletainers, these units are equipped with half-side, drop-gate for easy accessibility to contents and caster mounted for easy floor maneuverability.

Another interesting example is this (26"x38"x32") unit—selected by several plants as the best "standard" size for general floor operations.

NOW

CUSTOM-BUILT for the TEXTILE INDUSTRY

Lightweight Sizes and Types to Meet All Needs for Processing, Storage, Interplant Transport and Shipping

Special Snag-Proof Finishes Over Steel Mesh

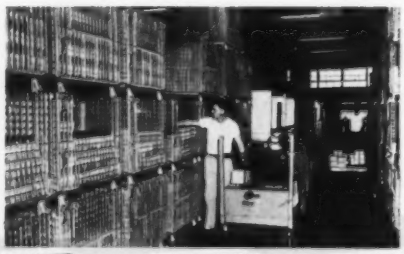
Safe Stacking . . . Fold-Down and Castered Models

TEXTILE PALLETAINER Applications are Unlimited!

- Contents always visible—always protected
- Stack safely—save floor space
- Higher Capacities—less tare weight
- Smooth, sturdy steel mesh—special plastic, lacquer or paint finishes
- Drop sides, ends or gates—accessibility
- Reinforced deck base—safe lift truck handling
- Fold-down features for freight savings

USP Palletainers are available in pre-engineered, custom-built models to meet Textile Industry application requirements.

Textile Palletainers offer modern container advantages plus unit-handling methods, safety, special protective finishes—and the simplicity of space-saving storage or rapid movement and shipment of unitized loads. Textile Palletainers are rapidly revolutionizing handling methods for in-work storage of cones, springs, quiller bobbins—even delicate yarns. Palletainers, with protective liners, have proven invaluable for threads through all stages of wet and dry finishing, storage and shipment.



This plant saves valuable floor space by stacking their Textile Palletainers during processing and storage operations.

Write Today... for complete information and prices on USP Textile Palletainers to meet your need.

Regular Heavy Duty Hi-Lode Palletainers are immediately available in a wide range of *standard* sizes, types and capacities to 6000 lbs. per unit.

PALLETAINERS ARE MANUFACTURED EXCLUSIVELY BY:

UNION STEEL PRODUCTS CO.

630 N. BERRIEN ST. ALBION, MICHIGAN

Manufacturing plants also in Compton, Calif. and Waterloo, Quebec, Canada

Colors are truer, re-runs fewer with Morton Chemical grade '999' salt

Tests for color standards show that dyes often are less effective when you use salt of average purity. Quality control methods will show best results with high purity Morton Chemical Grade '999' Salt. It's the all sodium salt, sodium chloride and a trace of sodium sulphate, that many dye manufacturers use in testing their dyes before they are sent to you.

When you use Morton Chemical Grade '999' Salt in your operation, it complements your dyes . . . makes them more effective and helps you get softer finishes, more even shades and greater color intensity. It's easy to see why. Morton Chemical Grade '999' is more than 99.95% pure sodium chloride. It is a low cost, high purity evaporated salt free from objectionable calcium and magnesium compounds that may precipitate or react with dyes to reduce their effectiveness.

Available in 100-lb. bags or bulk, Chemical Grade '999' is recommended for use *whenever commercial calcium-free salt* is required. It's specifically recommended when direct salting is used in dyeing rawstock, package, beam, beck or jig with either sulphur, direct, or naphthol dye.

Morton offers you intermediate grades of salt, too

In addition to Chemical Grade '999' Morton produces several other grades of high-purity salt for textile use. As the only nationwide salt company, Morton can supply the kind of salt and service you require, regardless of your size, particular operation or your location.

- ☐ Please send me more information about Morton Chemical Grade '999' Salt.
- ☐ I would also like to consult with a Morton representative about the other intermediate grades of salt Morton offers the Textile Industry.

Name_____
(please print)

Title_____

Company_____

Street_____

City_____ Zone_____ State_____

MORTON SALT COMPANY

INDUSTRIAL DIVISION

Dept. TI-3, 110 N. Wacker Drive, Chicago 6, Illinois

REMAZOL®

FIBER-REACTIVE DYES

- Brilliant shades
- Excellent fastness properties
- Shorter rinsing time
- Simple application

REMAZOLS present a unique system of fiber-reactive dyes that makes color part of the very nature of fibers.

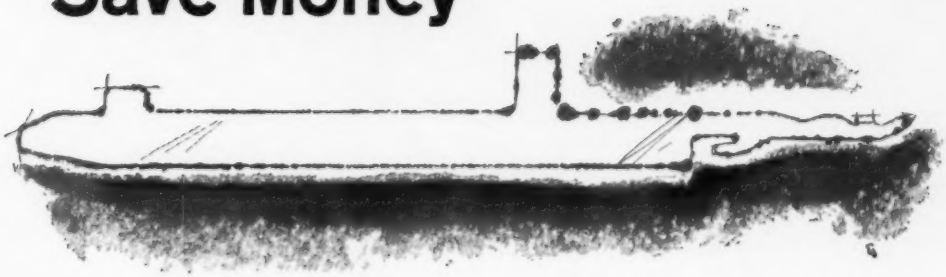
developed and patented by
FARBWERKE HOECHST A.G.
Frankfurt, West Germany

manufactured by
HOECHST CHEMICAL CORP.
West Warwick, R. I.

CARBIC COLOR & CHEMICAL CO., INC.
451 WASHINGTON STREET, NEW YORK 13, N. Y.
CHARLOTTE • PROVIDENCE • PHILADELPHIA • COLUMBUS • LOS ANGELES • HAMILTON, ONTARIO

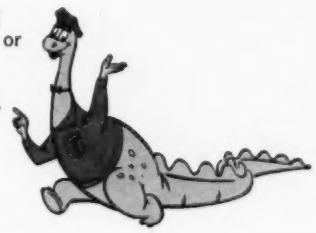
HOECHST

Needles... Oil... and How to Save Money



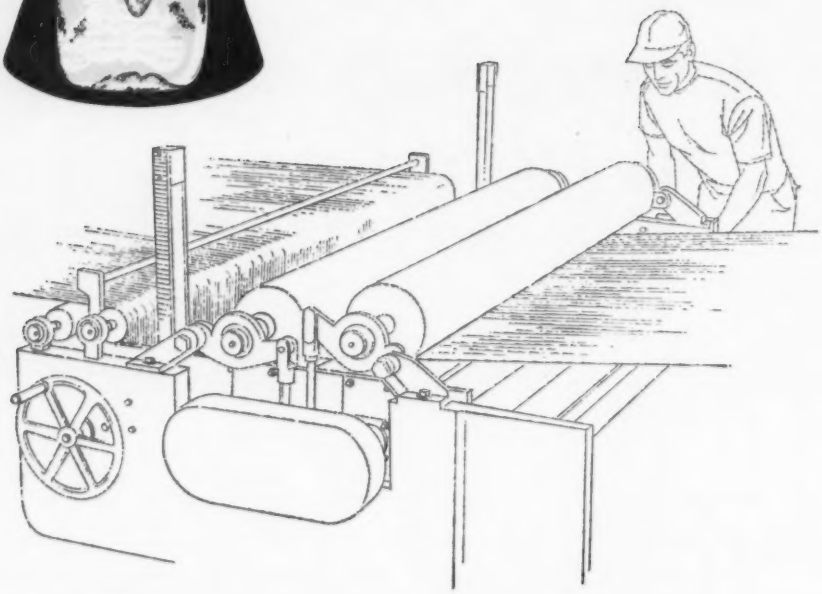
A stitch in time saves nine—but in time, knitting needles can rust—and rust wastes money. Moral: eliminate rust and other costly deposits with Sinclair Crystoil. This very light-colored oil works to give you more first-quality knit-wear—and a more profitable operation. Switch to Crystoil now. Next time management asks how you've cut costs, tell them you've changed to Sinclair—and show them the results.

Find out more about CRYSTOIL. Call your nearest Sinclair Representative or write Sinclair Refining Company, Technical Service Division, 600 Fifth Avenue, New York 20, N. Y. There's no obligation.



SINCLAIR
Crystoil Needle Oils

FROM A KERNEL OF CORN THROUGH CHEMISTRY



Kofilm

ACETYLATED STARCH DERIVATIVE

NEW STANDARD FOR SIZING

There's been a change. In warp sizing results. They're now much more uniform. Because KOFILM, a unique acetylated starch, eliminates variations in viscosity and strength. As proved in mill after mill in little more than a year.

KOFILM prolongs viscosity stability over extended periods of time. Eliminates lumping and congealing. It forms exceptional films. High in strength. Extremely flexible. Very tough. Reduces stoppages. Helps produce more uniform yarn.

KOFILM is quick and simple to prepare. It is available in a complete range of viscosities for all constructions and blends. It is also recommended for wash 'n wear finishes. Why not compare it with whatever starch product you're now using? Write for a sample and data, telling something of the use you have in mind.

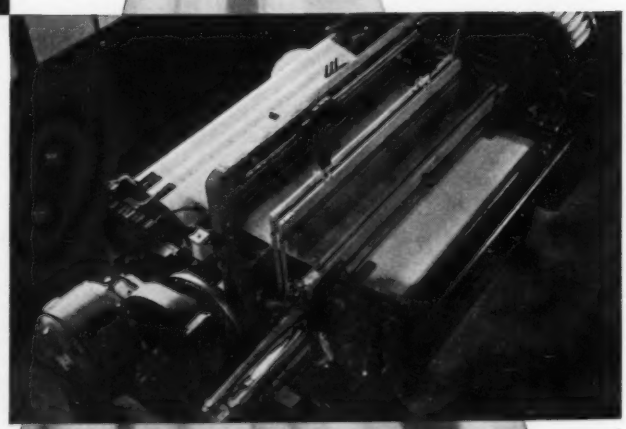
National

STARCH PRODUCTS INC.

NATIONAL STARCH PRODUCTS INC.
750 Third Avenue, New York 17
3641 So. Washtenaw Avenue, Chicago 32
311-401 Foundry Street, N.W., Atlanta 3

NEUTRAL CYANINE
GREEN GN EXTRA
C. I. 1078
For dyeing wool in union material
where light and wash fastness are important.
For dyeing in combination with the neutral dyeing
metal complex colors and chrome colors.
WOOL / NYLON / SYNTHETICS
Neutral · Acid · Metachrome
Top Chrome · Bottom Chrome
Reply to
ZINSSER & COMPANY, INC.
Hastings-On-Hudson 6, N. Y.
Subsidiary of
THE HARSHAW CHEMICAL CO.
Cleveland 6, Ohio
HARSHAW
ZINSSER

STAINLESS STEEL



QUICK, ECONOMICAL WAY to provide enlarged manufacturing or warehousing facilities is with Truscon "Budget Buildings". Available with 3-week delivery from order to job site. All roofing, siding, windows, doors, and hardware are shipped as a package. Roofing and siding are more rust-resistant than ever. No painting needed. Truscon "Budget Buildings" are available in widths of 12 to 28 feet—in heights of 10 and 12 feet. Also widths of 32 to 48 feet—in heights of 12 and 14 feet, in any length necessary. Mail coupon for full color brochure.

UNIFORMITY AND CONCENTRICITY PERMITS the use of Republic ELECTRUNITE® Mechanical Tubing in many textile equipment applications, such as these stop motion bars. Carefully rolled flat steel, carbon or stainless, can be inspected on both sides, then formed into a cylindrical shape that's electrically welded for uniform strength. The result is uniform tubing in every dimension, every contour. Stainless Textile Roll Tubing is produced in sizes up to 5" O.D. Send coupon for complete facts on ELECTRUNITE.

permits quick color changes

It is the easy-clean quality of textile equipment fabricated from Republic ENDURO® Stainless Steel that makes possible quick color changes and economical processing of small runs.

A water rinse is all that is required to restore stainless steel's smooth, hard surface to sparkling cleanliness. There is no need for expensive boil-outs—no need for using caustic, reducing, or oxidizing agents to remove dyes.

Republic Stainless Steel provides maximum resistance to rust and corrosion. It is non-contaminating. There is no danger of off colors caused by metallic oxides. Stainless steel does not react with or absorb dye-bath chemicals or peroxide bleaches. Considerably smaller quantities of these chemicals are required to maintain necessary concentrations.

Still another advantage of stainless steel equipment is its flexibility. Use the same equipment for dyeing, rinsing, or bleaching. It is the use of stainless steel that made possible the continuous bleaching process. Your equipment supplier has more facts. Or send us the coupon.

This example of the advantages of stainless steel is brought to you by Republic Steel in behalf of the stainless steel equipment manufacturers and the stainless steel service centers.

QUICK WAY to lower costs and improve quality of textile machine parts is the use of Republic Cold Drawn Special Sections. Formed to the predominating cross-section of the part, special sections eliminate or greatly reduce required machining. Also, since cold drawing improves the physical properties of any given analysis, completed parts are stronger and longer wearing. Other advantages may include improved appearance and simplified design. Mail coupon for more facts.

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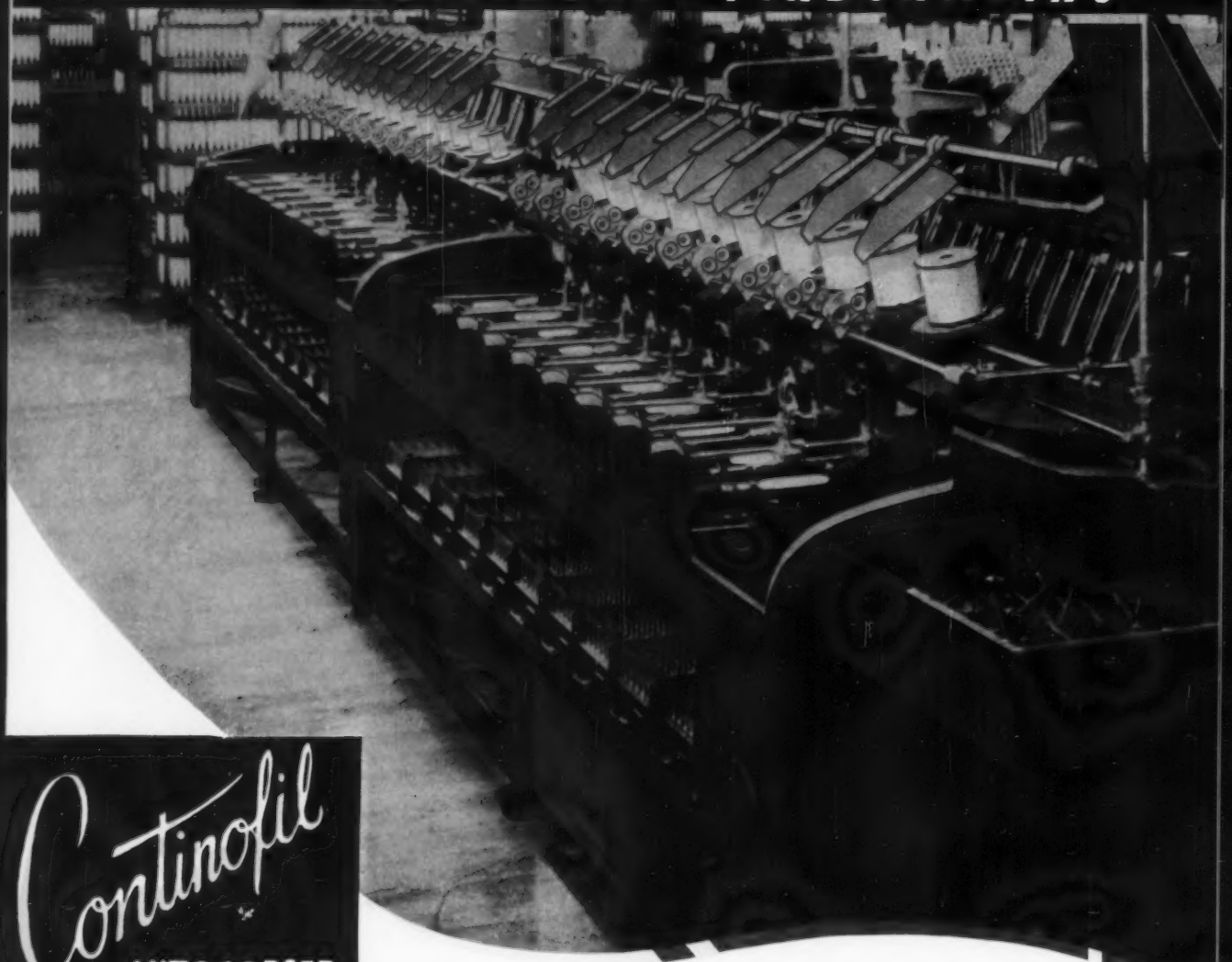

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5. Magazine fillers can load quills in loom exactly as they come from cones, reducing possibility of bands when weaving colored yarns
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NEWS IN BRIEF

Women Buy More Hosiery. Recession or not, women bought more and better nylons in 1958 than in 1957, Gordon Hanes, president of Hanes Hosiery Mills Co., told a recent meeting of the Women's Hosiery Council of the

National Association of Hosiery Manufacturers. Tentative figures for 1958 show an increase of well over a million dozen pairs, not including the considerable sale of stockings in the form of tights, for which figures are not yet available.

Rovana Being Marketed. Dow Chemical Co.'s new vinylidene chloride copolymer filament yarn, formerly called Q-957, has been renamed "Rovana," and is now being marketed in small quantities. The yarn is similar to saran, and is expected to have applications in the industrial, automotive, agricultural, home furnishings, and decorative fields. The yarn is being produced in 300, 400, and 550 deniers, in 10 colors.

Textile Picture Mixed. The degree of prosperity in 1959 will vary in the several segments of the textile industry, the Business and Defense Services Administration, U. S. Department of Commerce, predicts. Increased activity in the economy as a whole gives hope for increased production and better prices for cotton fabric mills. Weavers of man-made fibers should experience substantial—but not spectacular—improvement in output, prices, and profits. Improvement in woolens and worsteds will be modest, with the perennial problems of imports and low consumption remaining.

Howe Studies Sudanese Cotton. Percy S. Howe, Jr., president of American Thread Co., recently visited Sudan as a guest of the Sudanese government, to attend a conference on that country's long-staple cotton program.

NCTMA Seeks More Students. The North Carolina Textile Manufacturers Association has begun a concerted program to induce young men to enroll at the School of Textiles, N. C. State College. In a letter to NCTMA members, W. C. Cannon, president of the association, urged " . . . each member of our association to assume the responsibility of seeing that one intelligent high school graduate enrolls in textiles at North Carolina State this coming June or September."

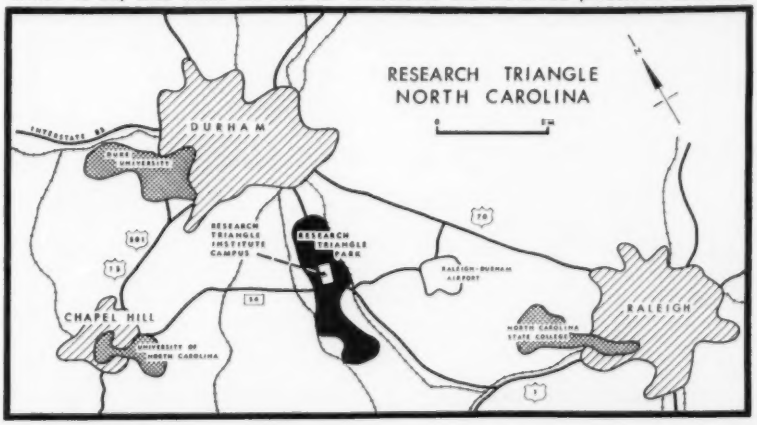
Japanese to Use Old Quotas. Although the voluntary quotas for ginghams and velveteens have expired, they will continue to be used until new ones have been negotiated, according to the Japanese Embassy in Washington.

Wash-and-Wear Doubled in 1958. National Cotton Council estimates that 2 billion yards of cotton

fabrics were given a wash-and-wear finish in 1958—double the 1957 figure. About 40 per cent of cotton fabrics for apparel were so treated.

Knitting Group for Textile Institute. A knitting group has been established by the Textile Institute (England), the first special-interest

North Carolina will form a Research Triangle Institute within the triangle formed by University of North Carolina, North Carolina State College, and Duke University. It will be housed in a building within the 4,000-acre Research Park, and will do research on a contract basis for industry, business, and government. Industrial concerns are also being invited to buy sites within the Park for laboratories and associated production activities.



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IN THE 1959 Beechcraft SUPER 18

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BEECHCRAFT — AIRFLEET OF THE TEXTILE INDUSTRY

group to be formed by the association. Until now, the Institute had been organized solely on the basis of geographical sections. Formation of several more groups is being considered.

Failures Steady. There were 92 business failures among textile mills in 1958, one fewer than the previous year. The firms which failed had liabilities of $9,019,000, compared with $8,811,000 for the 1957 failures, according to a report by Dun & Bradstreet, Inc.

Sweater Business Bumpy? Although sweater business is being booked at an improved rate for 1959, mills should not expect the

pace of new orders to be maintained throughout the year, Sidney S. Korzenik, executive director of National Knitted Outerwear Association, warned members of the association's Pennsylvania District at a recent meeting. Pointing out that the seasonal peak will be earlier this year than last, he said that the industry is facing a real challenge in extending its growth and progress. Classic styles will return in strength this year, and bulkies and brushed goods will sell well, he predicted.

ACMI Fiber Classes. The Amer-

Merchandising Notes

Bradford Dyeing Association has abandoned the usual staid, conservative approach in its 1959 advertising to the trade. The copy pitch contains such lines as these: "When a slick salesman with a

dark goatee offers you finishing at a tempting price, better say, 'Get thee behind me, Satan!'" and "When the phone rings angrily, don't ask for whom the bell tolls. It tolls for thee!"

Burlington Hosiery Co. is marketing an elasticized support sock, "Hole - In - One," specifically designed for use by golfers as an aid in minimizing fairway fatigue. The sock is 70 per cent wool, 30 per cent stretch nylon; has built-in cushion foot; reinforced toe and heel; and is Sanitized. The company will sponsor a hole-in-one contest this summer to promote the new sock.

American Carpet Institute is sponsor of a new book, "Carpet Laying and Estimating Handbook," written by D. J. Duffin in cooperation with a panel of experts from the carpet industry. The 216-page book is published by D. Van Nostrand, and sells for $4.50.

Du Pont Co. unveiled its "501" carpet nylon filament at the International Home Furnishings Market held in Chicago in January. The carpeting was produced by James Lees & Sons Co. and E. T. Barwick Mills. The carpeting will be available in about 25 cities by fall. * * * Du Pont will use the 20th anniversary of the commercial availability of nylon this year as a springboard for an extensive promotion of tinted nylon hosiery.

Spinning Wheel Rugs supplied 2,026 sq yd of wool hooked rugs for the new U.S.S. Independence, world's largest aircraft carrier. They will be used in the cabins of the captain, chief of staff, and flag officer, according to the report.

Thierry Freres. Lille, France, are marketing a "his and her" bed sheet woven in two lengthwise halves of different colors—one side is blue, the other pink. In another

version, one half of the sheet has pink and white stripes, the other blue and white.

Reeves Brothers, Inc., is Greenwood Mills' first licensee for its Bondyne dynel-blend fabrics, which are heat-set to give press retention and wrinkle resistance. Shown above (l-r) are W. N. Chace, vice-president of Greenwood Mills; A. L. Snyder, sales manager, Textile Fibers Department, Union Carbide Chemicals Co., manufacturer of dynel; and H. C. Hoffmann, vice-president of Reeves Brothers. Reeves will produce the Bondyne fabrics in flannel, tropical, gabardine, and worsted-effect styles for men's, boys', and women's wear.

TEN-O-FILM starches and synthetics go hand in hand

Looking for a starch that's compatible with the adjuncts you use in warp sizing synthetics? Ten-O-Film is your answer. This chemically modified starch derivative was specially developed to simplify and improve processing of both the new synthetic and natural fibers.

Ten-O-Film brings new economies to sizing operations. It requires less boiling time than conventional starches: Ten-O-Film reaches stable viscosity in 30 minutes and remains stable even under prolonged heating and circulation. Desizing can be carried out more readily, hence more economical dyestuffs can be used and with greatly reduced bleeding. The clarity of Ten-O-Film sizes will not mask the bright or pastel shades so widely used in modern fabrics. In desizing, the soap boil-off may sometimes replace the enzyme desizing process.

These are only a few of the advantages of using Ten-O-Film starches. Our technical representative will give you the complete Ten-O-Film story. He has tried and tested formulations for all popular synthetic and natural fiber blends.

The technical facilities of the world's largest corn processors await your call. These facilities include laboratories devoted to continuing research in textile technology, as well as unmatched sources of firsthand textile knowledge and experience. Our technical representative will be glad to help you take advantage of these resources. For full information, call our nearest sales office or write direct.

TEN-O-FILM® starches

Fine products for the Textile Industry: CLARO® · GLOBE® EAGLE® · FOXHEAD® · TEN-O-FILM® starches · GLOBE® dextrines

CORN PRODUCTS SALES COMPANY 17 BATTERY PLACE, NEW YORK 4, N.Y.

Stainless Steel gives foolproof protection against color flaws

at Franklin Process Company,
a Division of Indianhead Mills, Inc.,
Philadelphia

The Franklin Division plant of Indianhead Mills Inc. has been dubbed "The House of Rainbow Colors" . . . a tribute to the variety and rich tones of the yarns dyed there. Mr. Walter Wolfe, Vice-President and Manager of Franklin Division, points out that only Stainless Steel is used in their vats and dyeing machines.

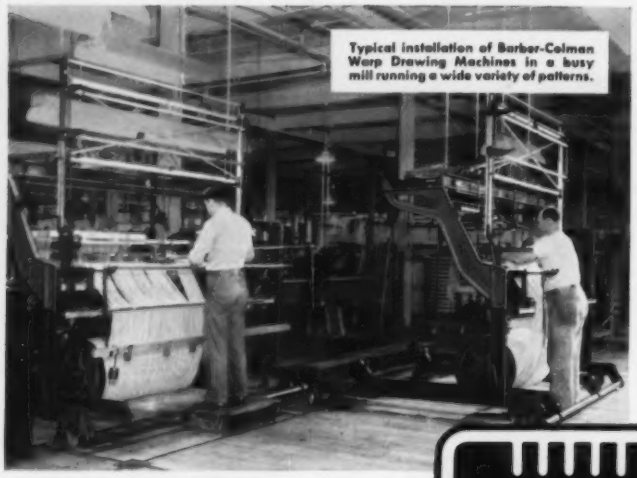
"Stainless Steel gives us foolproof protection against color flaws," says Mr. Wolfe. "Stainless can withstand the extremely high temperatures used to dye the yarns. Our equipment can be quickly and *thoroughly* cleaned because the Stainless Steel doesn't pit or corrode—there's no place for dirt or residue to stick. This is important when we change colors—a new batch of yarn isn't dulled by dye carry-over from an earlier batch.

"Stainless Steel has contributed vastly to the high quality of our yarn, in brightness of color and cleanliness. What could be a better recommendation than that?"

Specify Stainless Steel for *your* equipment. And if you want service-tested quality, specify USS Stainless Steel—available through the U. S. Steel representative or your local Steel Service Center. *USS is a registered trademark*

United States Steel Corporation—Pittsburgh
American Steel & Wire—Cleveland
National Tube—Pittsburgh
Columbia-Geneva Steel—San Francisco
Tennessee Coal & Iron—Fairfield, Alabama
United States Steel Supply—Steel Service Centers
United States Steel Export Company

USS United States Steel



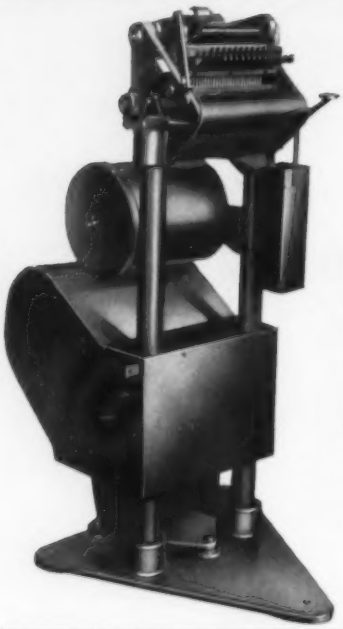
Typical installation of Barber-Colman Warp Drawing Machines in a busy mill running a wide variety of patterns.

THESE ACCESSORIES

GIVE GREATER EFFICIENCY IN OPERATING

BARBER COLMAN

WARP DRAWING MACHINES



POWER PATTERN PUNCH

The Power Pattern Punch is used to cut the sheet metal pattern which controls the selection of the correct heddle, drop wire, and reed dent, and the operation of the warp rods. This pattern chain is punched from the drawing-in draft prepared from the required weaving design. The machine, which is powered by a motor in the lower housing, is operated by setting keys for each line in the draft and then punching out each complete line by releasing one lever. It will punch paper, as well as metal, patterns.

HEDDLE COUNTER

This motor-operated unit will rapidly and accurately count off a selected number of heddles in a given frame, thus permitting excess heddles to be removed. It also checks the heddles to make sure that alternate key holes are correctly lined up. If it finds a heddle which is wrongly placed, the machine stops automatically, thus eliminating a possibility of mechanical damage to the heddles in the Warp Drawing Machine.

B-C MACHINES CAN USE PAPER PATTERNS

To answer a frequently-asked question: Barber-Colman Warp Drawing Machines CAN perform and HAVE performed their functions just as well with paper patterns as with metal patterns. However, due to lack of durability, paper patterns are recommended only for short runs.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

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Members of the "Look" magazine All-America football team were recently presented with jackets by Woolens and Worsteds of America. Shown above are Al Goldstein, North Carolina; Tom Kent, vice-president of Kent Mfg. Co., whose firm donated the fabric; Billy Cannon, Louisiana State; Don Meredith, Southern Methodist; and Gene Selawski, Purdue.

ican Cotton Manufacturers Institute has scheduled a series of classes on cotton fiber testing at its laboratory in Clemson, S. C. The classes will be held April 20-May 29, August 10-September 18, and October 26-December 4. Laboratory supervisors and former trainees may make arrangements for special refresher courses during the regular training periods.

"Fiberized" Instead of "Nonwoven"? Nonwoven fabrics will be renamed "fiberized fabrics," if a

suggestion proposed by Prof. E. B. Grover of the School of Textiles, N. C. State College, is adopted. He reminded mills that the term "nonwoven" is ambiguous; that the fabrics so designated could with equal logic be called "nonknitted," and that any term with a "non-" prefix is likely to carry the stigma of a cheap copy of the real thing.

Interest in Slater Mill Increases. The Old Slater Mill, Pawtucket, R. I., first cotton mill in America, attracted about 15,300 visitors in 1958, up some 49 per cent over the 1957 attendance. Thirty-five states and the District of Columbia were represented among those visiting the shrine.

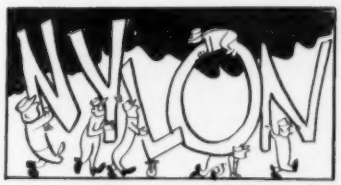
TTMA Convention. Ed Lacey, president of the Tufted Textile Manufacturers Association, has announced that the Hollywood Beach Hotel, Hollywood Beach, Fla., will be the site of the 1959 annual convention May 13-16. The decision to hold the convention in Hollywood Beach came after plans for a five-day cruise from Savannah, Ga., to Nassau aboard a cruise ship failed to materialize.

Parachute Course at MIT. Massachusetts Institute of Technology, Cambridge, Mass., will offer a two-week special seminar this summer for those interested in the design,

development, and application of parachutes and other retardation devices. Lecture topics will include properties of fibers used in these devices, specifications, fabrication, and other phases of the subject. The seminar will meet from July 20 to July 31, and will be under the supervision of Dr. Stanley Backer, of the MIT faculty, from whom details are available.

New neckties offered by Sweet Neckwear Co. are treated with a fluoro-chemical stain repellent which is claimed to guard against water stains, oil stains, and common dirt.

Footnote to Nylon History. Du Pont has finally revealed how nylon got its name. When the fiber was ready for marketing in 1939, the decision was made to call it



"no-run," and promote its use in hosiery. However, it was concluded that the hosiery would run, so "nuron" was next considered. But this sounded too much like a nerve tonic, so another vowel-switch produced "nilon." Then Du Pont found that many people pronounced this "nillon," so the final change was made to "nylon." The company later found that a shoe polish called "nylon" had been marketed in mid-19th-century England, but luckily—for Du Pont—the company making it had long since gone out of business.

LTI Ups Standards. Candidates for admission to Lowell Technological Institute as freshmen next September will be required to have completed the Scholastic Aptitude Test of the College Entrance Examination Board.

IF IT'S GROUP INSURANCE . . .

CHECK FIRST WITH PROVIDENT

The nation's largest underwriter of group insurance plans for the textile industry, Provident has built its leadership on service. Provident began in 1887 to write the forerunner of today's modern and complete line of group insurance coverages, and has been a leader in pioneering new group insurance ideas for over 70 years. The latest of these is the idea of claim cost control — which has its ultimate advantage in lower premium costs for both the sponsoring companies and their participating employees.

Textile companies are invited to check first with Provident whether the question is the installation of a new plan or the revision of an old plan. In either case, Provident is fully equipped through experience and facilities to provide the right answers to your individual needs.

LIFE INSURANCE • ACCIDENTAL DEATH AND DISMEMBERMENT
ACCIDENT AND SICKNESS • HOSPITAL-SURGICAL-MEDICAL CARE
MAJOR MEDICAL AND OTHER HEALTH INSURANCE COVERAGES

PROVIDENT LIFE & ACCIDENT INSURANCE COMPANY

Chattanooga - Since 1887

LIFE ACCIDENT SICKNESS HOSPITAL SURGICAL MEDICAL

Vinyl-coated nylon tarpaulins in bright red were used by a Jacksonville, Fla., firm to completely cover a house while it was being fumigated with methyl bromide gas.

Short Courses at Ga. Tech. A short course in Management for Engineers will be offered at Georgia Institute of Technology, Atlanta, from March 2 to May 4, meeting for about 2½ hours each Monday evening. The course will present an introduction to management theory and practice for working engineers. * * * On May 11-12, Georgia Tech, the Office of Isotope Development (AEC), and Lockheed Aircraft Corp. will present a symposium on Industrial Uses of Radioisotopes. Specific topics include radiography, gauging, and tracing; speakers from the textile industry will be on the program. Further information on either program is obtainable from Richard Wiegand, director, Short Courses

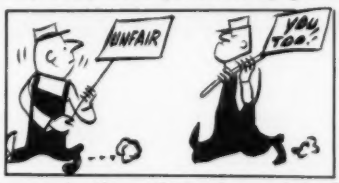
Labor-Management News

Appeals NLRB Order on Printers. Southern Bleachery & Print Works, Taylors, S. C., is appealing to the Supreme Court a decision of the Fourth Circuit Court of Appeals upholding a National Labor Relations Board order against the company. The company claims that its printers are supervisors within the meaning of the Taft-Hartley Act, and hence not subject to collective bargaining action between the firm and the Machine Printers Beneficial Association, the printers' union. NLRB held that the printers are employees, and so charged the company with violating the Taft-Hartley Act by refusing to bargain with the union and by discharging certain printers for giving testimony against the firm.

Milliken Charged by NLRB. Charges of unfair labor practices in the 1956 closing of the Darlington (S. C.) Manufacturing Co. have been issued against Roger Milliken by the National Labor Relations Board. The charges are the same as those previously made against the company and Deering Milliken & Co., Inc. Mr. Milliken termed the action "vidictive harassment," and promised to fight it in the courts. Hearing before the NLRB is set for March 17, in Charlotte, N. C.

Unions Advertise for Wage Hike. Textile Workers Union of America has taken advertising space in the daily business press, in the form of "An Open Letter to the Managers of the Textile Industry," to assure management that they and the unions have much in common, and that a voluntary general wage increase would be better than an increase brought about by a hike in the Federal minimum wage.

What? Pickets picketing a machinery supply company in Portland, Ore., were picketed by pick-



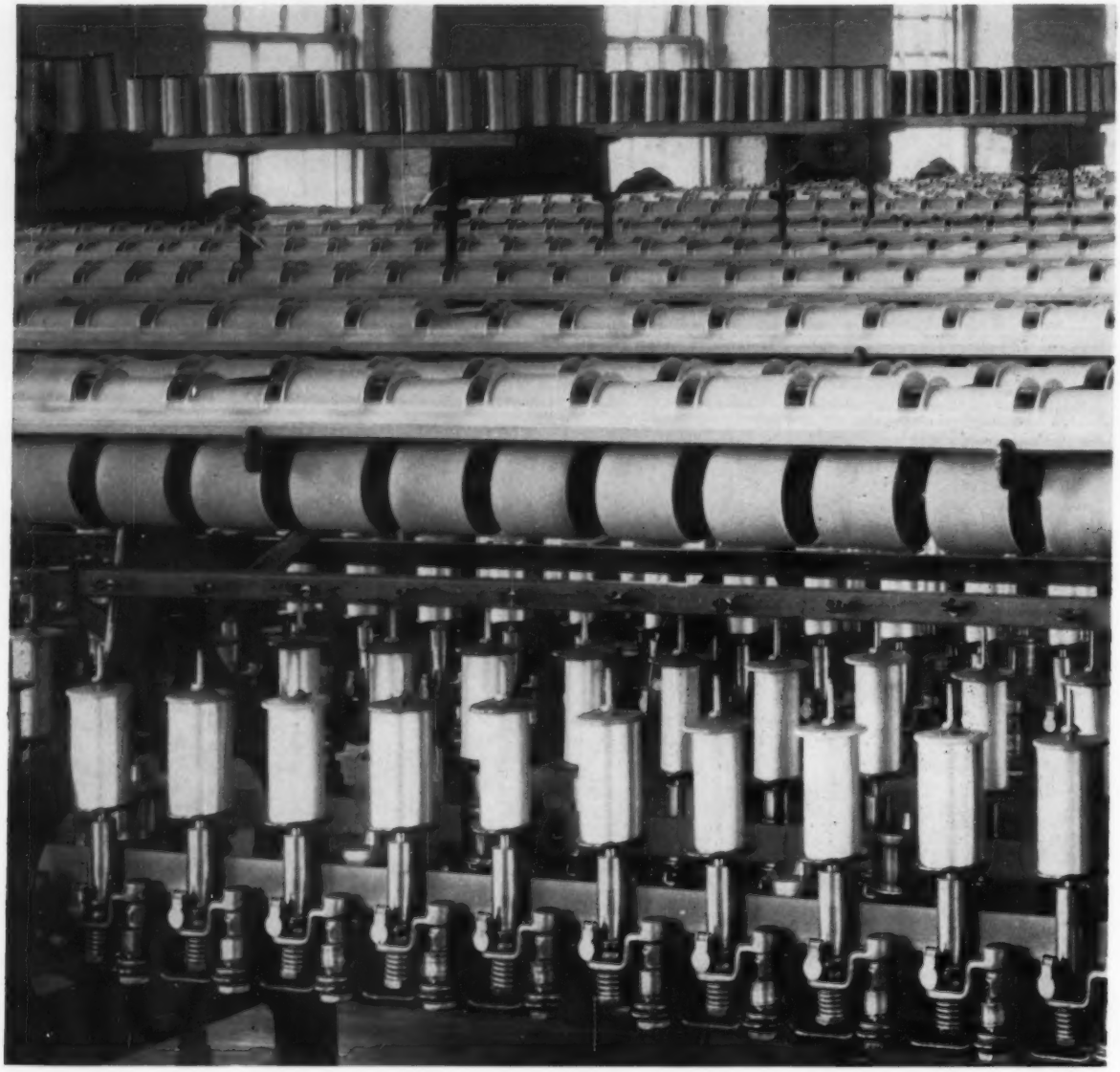
ets protesting that the original pickets were carrying picket signs made in a nonunion shop.

NAM to Discuss Labor Problems. Practical ideas for the solution of troublesome labor-management problems will be interchanged at the 31st Institute on Industrial Relations, to be held March 9-13 at the Hollywood Beach Hotel, Hollywood, Fla. The meeting is sponsored by the National Association of Manufacturers, and will include seminars on new developments in collective bargaining, management techniques, productivity problems, and similar subjects.

NLRB Decides Against Renfro. National Labor Relations Board has ruled that Renfro Hosiery Mills, Mt. Airy, N. C., discharged an employee for union activities, and engaged in other unfair labor practices. However, reinstatement and back pay were not ordered for the employee, since he assaulted a foreman after his discharge.

Labor Newspaper Network? Representatives of the labor press met recently in Washington and mapped plans for transforming some of labor's existing periodicals into a cross-country network of weekly community newspapers, edited by unions but carrying general news. The aim is to get general readership—and thus influence nonunion Americans as well as union members.

Right-to-Work Still Active. Undaunted by setbacks in the November elections, union shop foes are planning new campaigns. Reed Larson, who spearheaded Kansas' successful "right-to-work" drive, has moved to national headquarters. Proposed targets in efforts to ban union shop: Michigan, Wisconsin, Illinois, Maryland, and Delaware.



Three generations of lubrication experience

Today's complex textile machinery is being designed for more precise operation than ever before. Precise *lubrication*—the *right* lubricant at the *right* spot—by the same token becomes increasingly important . . . in fact, *vital* to full realization of your machinery's full output potential.

Precise lubrication has been the purpose and function of Standard Oil lubricants in the textile industry for over 70 years. Standard Oil's experience is backed by the world's largest facilities for petroleum research and testing . . . unmatched resources for producing a steady flow of product improvements and new lubrication techniques —better, more *precise* lubrication for the textile industry.

Call in a Standard Oil lubrication specialist today . . . He'll be glad to go over your equipment and lay out a plan that will insure *precise, profitable* lubrication throughout your plant.

STANDARD OIL LUBRICANTS

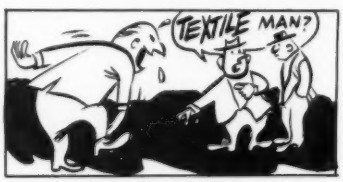
STANDARD OIL COMPANY
(KENTUCKY)

National Business Publications annually presents a "Silver Quill Award" to an outstanding leader in business or government, who has rendered distinguished service to business and to the nation. This year's was a joint award presented to Speaker Sam Rayburn (left) and former Speaker Joe Martin, Jr., in ceremonies at Washington, D. C. NBP's chairman of the board, Richard P. Smith (right) president of W. R. C. Smith Publishing Co., publishers of "Textile Industries," presided at the meeting, and the presentation speech was made by Senate majority leader Lyndon B. Johnson (second from left).

and Conferences, Engineering Extension Division, at Georgia Tech.

Textile Report Catalogs Available. A list of all reports in the Army Quartermaster Corps Textile Series has just been published; a catalog dealing with reports of research in anthropometry (measurements of the human body) is also available. The former is designated CTR-194, and the latter CTR-124. They are available at 10 cents each from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.

Textile Men Optimistic. In a survey conducted by the American



Commercial Bank among textile manufacturers in the Piedmont Carolinas, 77 per cent of those interviewed foresaw better sales in 1959 as compared with 1958, and 68 per cent forecast better earnings. Significantly, not one of the textile men thought that sales and earnings would be worse in 1959, although 23 per cent thought the sales picture might be the same as in 1958 and 32 per cent thought earnings would be the same.

Moderate Recovery in Textiles Seen. Textile mill prospects appear better than they have been for several years, says the *Value Line Investment Survey*. Depart-

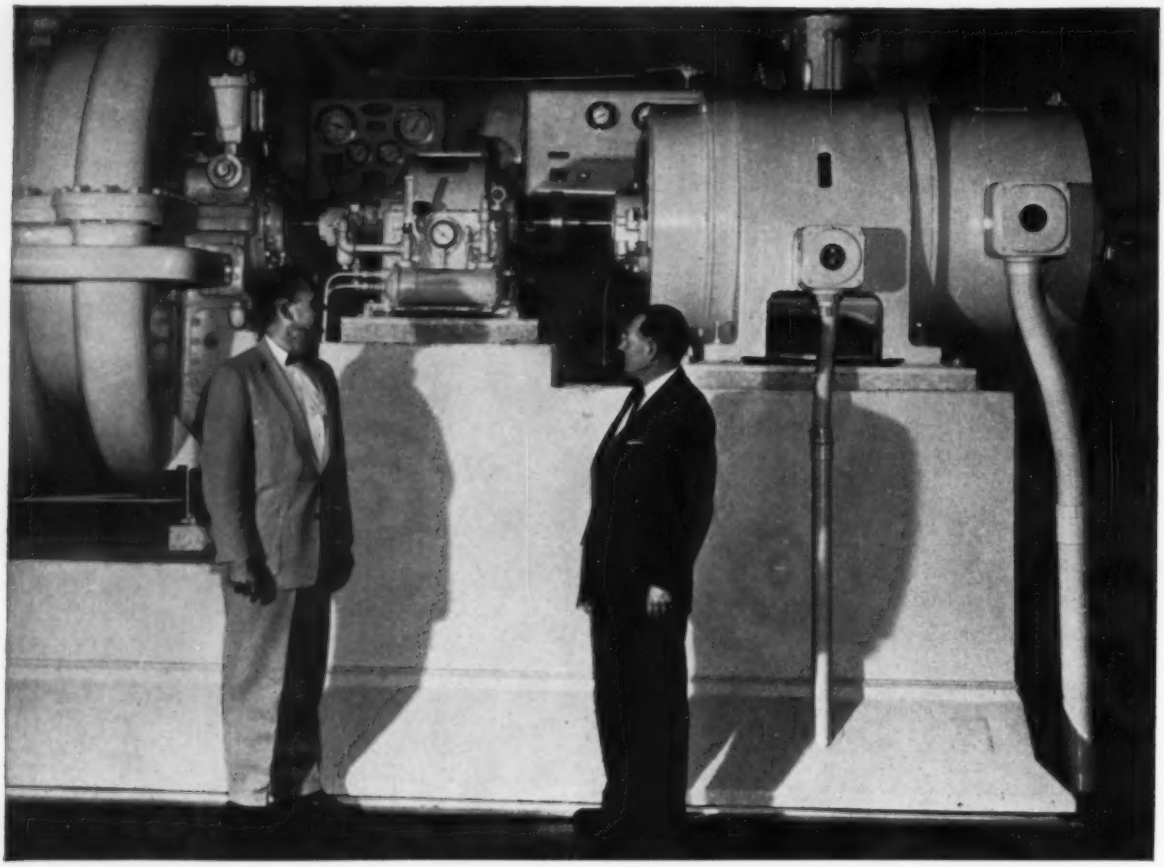
ment store sales are improving, mill inventories are at their lowest point in some time, and the price structure has firmed. Total output this year is conservatively estimated at 5 per cent above last year's. Improvement in earnings will be moderate, however. For the next three to five years, the *Survey* sees brighter prospects: Gradual further curtailment of capacity, coupled with expanded demand through population growth, increased emphasis on development of new products, and improved merchandising programs should lead to increased sales, a widening of profit margins, and a generally healthier competitive situation.

Thinner Seam for F-F Hosiery. Burlington Hosiery Co. has developed a method for seaming full-fashioned hosiery which it claims produces seams 35 per cent thinner than heretofore, yet which are

stronger and have the same ratio of elasticity at all points of stress as the stocking fabric itself. The new method incorporates a number of changes in existing seaming machines.

10-point program to aid textiles

■ A TEN-POINT program to aid the ailing textile industry, based on findings of a special subcommittee, has been approved by the Senate Commerce Committee. The report contained these recommendations: (1) Establishment of a committee within the Commerce Department to deal exclusively with textiles. (2) Institute a program to study and publish data concerning textile production. (3) A quota system, established by specific categories of textile products, to permit foreign producers to sell in the American market within limits that will not further endanger existing capacity. (4) Administrators of foreign aid programs make study of long-run consequences of further expansion of world textile capacity before making further grants. (5) More realistic interpretation of the peril point provision of the trade agreements act and faster action on escape clause cases. (6) Use portion of custom duties on textile products to finance research. (7) Internal Revenue Service to issue a revised schedule of depreciation rates on textile machinery. (8) Senate Finance Committee to study possible revisions of revenue code to protect against abuses by financial speculators. (9) Elimination of two-price cotton system. If not immediately feasible, increase of tariffs on imported cotton products to equal differences in cost between foreign and domestic products. (10) Foreign assets control division of the Treasury department to review its policy toward importation of partly processed textile fibers.



One of two Fairbanks-Morse 4160 volt, 700 hp. slip ring motors which power Carrier refrigeration compressors.

8-speed climate with F-M motors!

Flexible control of new air conditioning system saves power and maintenance for Union Oil Center

Through a new Carrier dual-duct high-velocity system powered by Fairbanks-Morse slip ring motors, the magnificent new Union Oil Center in Los Angeles is ideally air-conditioned at minimum power and maintenance cost.

Providing 8 speeds between 75 and 100 percent of capacity, the two F-M 700 hp. motors make it possible to match operating rpm. of compressors, chillers and condensers to any specific condition. The new Center covers 5 acres, with 1200 employees occupying 426,000 square feet of the office space in a complex of four buildings—an installation requiring the finest in air-conditioning equipment and components.

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EXECUTIVE VIEWS

Prepared by a man who is closely identified with the textile industry.

A chance to avoid gin-damaged cotton

SPINNERS using American cotton may have cause for cheer in the new ruling which permits farmers to plant cotton in excess of the normal quota with the understanding that it can only go into the Loan at 60 per cent of parity. The worst feature of this Cotton Loan from the spinner's standpoint was that it completely disrupted the natural relationship between buyer and seller, and took away from the spinners any vestige of control over their raw material. Perhaps this new regulation may make it possible to reestablish some normal relationship between the farmer and his customer, the spinner.

PRESUMABLY most farmers planting this excess acreage are not going to want to put the cotton in the loan at 60 per cent of parity, but will greatly prefer to find a spinning mill customer, and this customer may then have something to say about the kind of cotton he wants. Under the prevailing Loan arrangement, the farmer has a guaranteed customer for his cotton, whether it will make good yarn or not. It has been a rather amazing thing that studies made by the USDA have shown that farmers almost invariably lose money by doing all of this overcleaning and overdrying of their cotton, and yet they obstinately insist on having the gin maltreat the cotton.

We have heard reports of cotton buyers contracting with growers to deliver cotton normally ginned without lint cleaners. These buyers of course had to pay some premium to get this cotton, but were hoping to be able to make enough better yarn out of it to justify the premium. If thousands of farmers begin planting this excess acreage to produce cotton that can only be put in the loan at 60 per cent of parity, there ought to be an excellent opportunity for spinners who would like to get some of this cotton ginned to suit themselves if they take steps to do this in time.

Of course this cotton will be ginned in the same gins as any other cotton, and unless it can be to the farmer's advantage to bypass lint cleaners, this cotton will receive the same harsh treatment as that which is being dressed up for the Loan.

THE FACT that some cotton buyers apparently think it worthwhile to pay a premium on normally ginned cotton would seem to indicate that these buyers could make arrangements with gins and cotton growers for getting some of the "surplus acreage" cotton ginned the way they want it. The farmer will not have the ready-made, guaranteed market at the highest possible price for this cotton, but apparently is going to have to dispose of it on a competitive basis, and a spinner wanting to buy some of this cotton might be able to show the farmer the advantage of not ginning it to death before he sold it.

"The fact that some cotton buyers apparently think it worthwhile to pay a premium on normally ginned cotton would seem to indicate that these buyers could make arrangements with gins and cotton growers for getting some of the 'surplus acreage' cotton ginned the way they want it. . . "

If the farmer can be made to understand that he really does lose money by artificially raising the grade of his cotton, he certainly ought to be willing to sell it with whatever preparation the purchaser wants.

Most persons who have made an elaborate study of this whole question of cotton ginning and preparation seem convinced that the Loan itself is at the root of

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It follows, therefore, that different methods of handling textured filament yarns are necessary for best results. Take the matter of tensions, for example:

Because textured filament yarns are "precise" yarns, the use of post tensioning devices at the creel is very important if streaks in finished fabric are to be avoided. Equal tensions must be obtained, and every end should be checked carefully.

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most of the trouble with overworked cotton. The farmer quite naturally has no interest whatever in whether the cotton will make good yarn or not, and is only interested in a customer. The government becomes his customer and the government's cotton classers will give the farmer a better grade on cotton put through lint cleaners than not put through them.

Even though the quality of the cotton from a spinning standpoint is seriously lowered by the lint cleaners, the grade of the cotton, which determines its selling price, is raised because the cotton classers have come to attach a great deal of importance to the smoothness of the lint in the sample, and the more it feels like reworked roving waste, the better they seem to like it. This smoothness often is obtained by merely running normal cotton through the saw cylinder to chew up any of the rough looking places. The spinner could have done the same thing in his card, and there is no particular reason for his paying an excessive price to a gin to do what he could have done himself so cheaply. If he didn't think the card smoothed the cotton up enough, he could always install one of these lint combers himself and get the smoothness which the classers consider so desirable.

If we can get the buying and selling relationship back where it was years ago, and eliminate the automatic customer for the damaged cotton at the fancy price, perhaps there may be some hope of an extension of this normal competitive relationship. There seems to be no possible hope of establishing anything of the sort so long as the government is paying the top price for over-worked cotton, and the only hope seems to rest in this substantial amount of cotton which will apparently be sold for less than the loan value at highest parity.

It may not prove practical for spinners to make such contacts with ginners and producers, but the idea at least is interesting, and any spinners who do think they might like to buy some of this cotton ginned to their taste must not wait too long to establish their contacts which would make this supply of cotton possible.

FUTURE EVENTS

DATE		EVENT	LOCATION
Mar.	12-13	Textile Division, ASME	Clemson House Clemson, S. C.
	19	Southern Textile Methods & Standards Association	Clemson House Clemson, S. C.
	19-21	American Cotton Manufacturers Institute annual convention	Palm Beach Biltmore Palm Beach, Fla.
	21	South Central Section AATCC	Hotel Patten Chattanooga, Tenn.
	23-24	Textile Research Institute annual meeting	Hotel Commodore New York City
	26	Textile Quality Control Association	N. C. State College Raleigh, N. C.
	27	Hudson-Mohawk Section AATCC	Chelsea House Tribes Hill, N. Y.
Apr.	2-3	Textile Subcommittee, AIEE	Heart of Atlanta Motel Atlanta, Ga.
	3	South Carolina Division, Southern Textile Association	Fairforest High School Spartanburg, S. C.
	4	Niagara Frontier Section AATCC (joint meeting with CATCC)	Hamilton, Ont.
	9-11	Alabama Textile Manufacturers Association annual convention	Hotel Beuna Vista Biloxi Miss.
	10-11	Piedmont Section AATCC	R. E. Lee Hotel Winston-Salem, N. C.
	11	Northern North Carolina-Virginia Div. Southern Textile Association	Lexington High School Lexington, N. C.
	15-16	ACMI Fiber Testing Lab open house	Clemson House Clemson, S. C.
	17-18	Delta Kappa Phi Fraternity annual convention	Roger Smith Hotel Washington, D. C.
	18	Southeastern Section AATCC	National Guard Armory Cedartown, Ga.
	22-25	The Cotton Manufacturers Association of Georgia annual convention	The Diplomat Hollywood Beach, Fla.
	23-25	Phi Psi Textile Fraternity annual convention	Biltmore Hotel Atlanta, Ga.
	25	Textile Operating Executives of Georgia opening, picking carding, and spinning discussion	Ga. Tech Atlanta, Ga.
	25	Eastern Carolina Division Southern Textile Association	N. C. State College School of Textiles, Raleigh, N. C.
	28-29	Institute of Textile Technology technical advisory committee and board of trustees	I. T. T. Charlottesville, Va.
	29-30	Fiber Society, Inc., meeting	Fontana Village, N. C.
May	2	Alabama Textile Operating Executives slashing and weaving discussion	Thach Auditorium Auburn, Ala.
	4-8	Knitting Arts Exhibition	The Auditorium Atlantic City, N. J.
	4-5	Hosiery Industry Conference and National Association of Hosiery Manufacturers annual convention	Claridge Hotel Atlantic City, N. J.
	5	Underwear Institute annual meeting	Hotel Traymore Atlantic City, N. J.
	12-15	Textile Institute annual conference	Scarborough, England
	12-14	Cotton Research Clinic	Grove Park Inn Asheville, N. C.
	13-16	Tufted Textile Manufacturers Assn. annual convention	Hollywood Beach Hotel Hollywood Beach, Fla.
June	18-20	Southern Textile Association annual convention	Ocean Forest Hotel Myrtle Beach, S. C.
Sept.	28-29	American Gas Association Textile Processing Symposium	Sedgefield Inn Greensboro, N. C.
Oct.	7	Chemical Finishing Conference	Statler-Hilton Washington, D. C.
	8-10	AATCC National Convention	Sheraton Park and Shoreham Hotels Washington, D. C.

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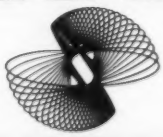

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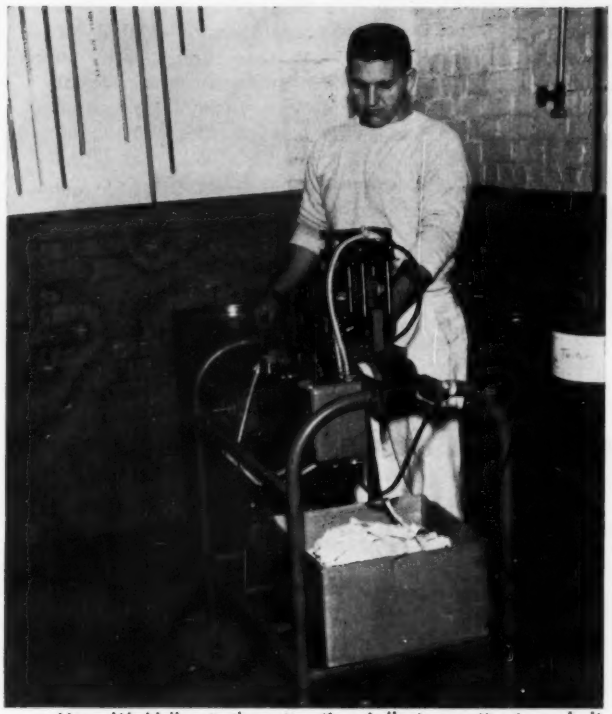
Textile Industries
FOR MARCH 1959



Harry Waddell puts the automatic spindle tape cutter to work. It will then operate unattended as he goes about his duties as assistant supply clerk. Cans hold finished tapes.

Tape-cutting cost trimmed $1500 a year

and more uniform spindle speeds are results we get with an automatic cutter made by our master mechanic

by Ashley B. Roberts
Assistant Superintendent
China Grove Cotton Mills Co.

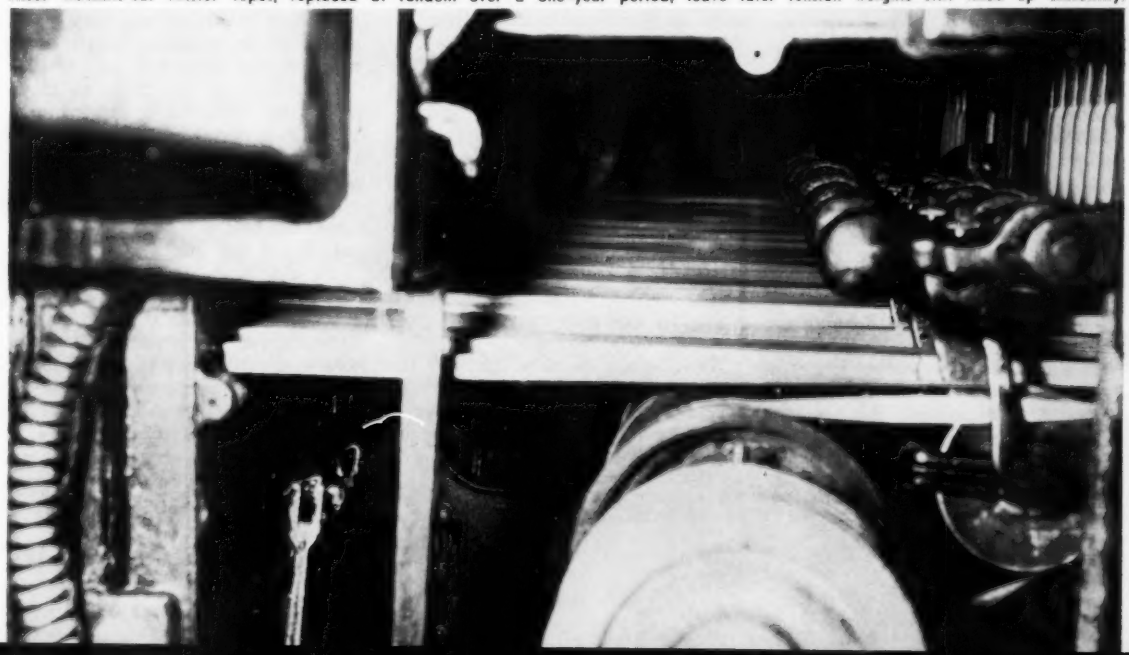
Exclusive

THF TREND toward larger spinning and twister packages, and higher spindle speeds requires a re-examination of tape construction and tensions. Maximum tape tension can be obtained only by a correctly cut tape. Uniform spindle tapes, cut automatically, save tape cutting cost and insure yarn quality and strength through more uniform spindle speeds.

Two things must be done in establishing the correct tape length for a frame: (1) the tape length needed to position the idler weight for maximum tape tension must be determined; and (2) the tapes must be cut under the same tension so the tape will return to the correct length under the uniform tape tension weight.

All of these things were accomplished, in addition to an estimated

These machine-cut twister tapes, replaced at random over a one-year period, leave idler tension weights still lined up uniformly.



savings of $1500 annually in tape cutting cost, by an automatic tape cutting machine designed and built by our master mechanic, John K. Nicholson.

The tape is taken from the roll and placed in a sliver can to allow tension relaxation and conditioning (it was found that tape cut directly from the roll caused some variation in length after relaxation). The tape is then fed into the automatic cutter, which is equipped with a predetermining counter and knock-off. After a variable tension device is set and the first tape is checked against a standard measurement, the machine needs no attention until a tape of another length is desired.

Our machine is located in the supply room where we cut and store the tapes in twelve-inch sliver cans. Cans containing a predetermined number of tapes are issued to the spinning rooms in exchange for an empty container. This system allows an easy and accurate system for handling, storage, and cost control.

Since our automatic machine was put in service more than a year ago, spindle tape cutting for spinning, twisting, and spooling in our three mills consumes about eight hours per week. The machine is set up and operates unattended while the supply room personnel pursues other duties. Thirty to forty hours per week were needed to handle the spindle tapes when they were cut with a manually operated cutting device (reported in TEXTILE INDUSTRIES, December 1955, p. 141).

Extension service to work with mills on chemical finishing of cotton

by Lawrence L. Heffner
Cotton Utilization Specialist
N. C. Agricultural Extension Service
N. C. State College

Abstract*

■ THE COOPERATIVE Extension Service has only recently been active in extending research in the textile industry. First authorized in 1914, it is based upon cooperative agreements between the land-grant colleges and the U. S. Department of Agriculture.

The major function of Extension is to aid in bringing practical information to those interested, and to encourage its application. With this broad purpose, the Textile Research Center of the School of Textiles, N. C. State College, in cooperation with the Department of Agriculture, has recently initiated a pilot educational project in the chemical finishing of cotton.

Basically, the objective of our project as stated in the contract between the Extension Service and N. C. State is to facilitate "the rapid adoption of research results by the cotton finishing industry," with the intent to "contribute substantially to continued improvement in the quality of these [cotton] materials marketed and in the efficiency of the firm marketing operations, thus benefitting producers, the industry, and consumers."

The work we plan to do may be better understood by comparison with the kinds of extension work in textile research done by other groups. One example is the practice of chemical companies, who work closely with the individual textile manufacturer to ensure that their laboratory product serves his needs, and that he is applying it as effectively as possible.

British textile research has chosen an interesting way to "keep in touch." Their government as long ago as 1916 formed the Department of Scientific and Industrial Research to promote research in industry. This agency has other objectives as well, but one of the effects of its operation has been the formation of over 40 cooperative research organizations in various industries. One of the oldest of these is the British Cotton Industry Research Association, better known as the Shirley Institute.

Establishing a research organization devoted to the needs of the cotton textile industry was not sufficient, however. The Institute directors concluded that, like other research laboratories, they suffered more or less from isolation from industrial practice. Accordingly, in 1929 they took the positive step of setting up a liaison department to work intimately with the industry.

This department is staffed by practical men drawn from the industry and further trained at the Institute in the research work and outlook of the laboratory. They pay routine visits to all members, and also special visits upon request, carrying with them the latest information which they can interpret to the mill free from scientific jargon.

Such liaison is reversible, for the staff not only disseminates research ideas, but brings back and interprets to the laboratory the needs of industry. This liaison service is featured by the Shirley Institute in accounting for their success.

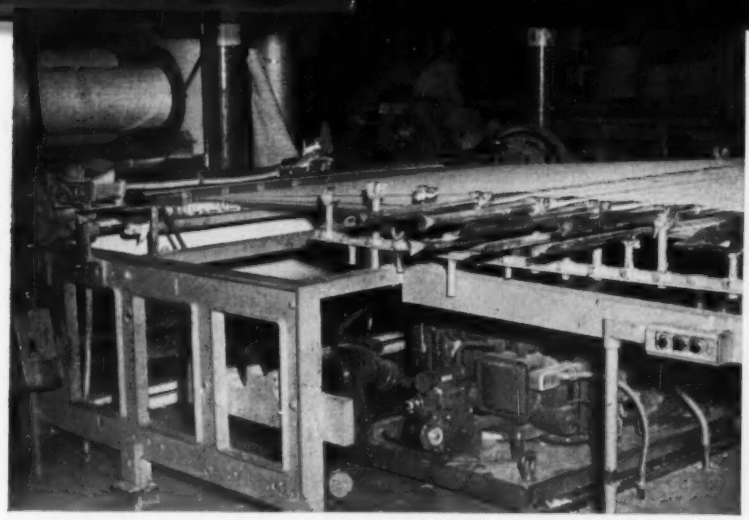
The present project will be limited to extension in cotton chemical finishing. Our first steps will be to inventory the research which is applicable and freely available, and to find what needs the finishing industry regards as most pressing. To ensure that all segments of cotton users are represented, we shall have the advice throughout of an Advisory Committee representing the industry and the National Cotton Council, the Department of Agriculture and its Research Service, State Extension Services, and State textile schools.

Based on a cooperative study of the industry and its problems, and of the research available, we then hope to design a program to present to the cotton finishing industry, in the words of our contract, "the selected research information which will be of the greatest economic benefit to the industry and to encourage the adoption of this information." Although for purposes of this study we are now located in the Southeast, the present center of the finishing industry, the scope of our project is nation-wide.

Developments in chemical treatments for cotton are appearing at such a rate that it is difficult for some individuals and mills to keep abreast of them for present and future planning. An important factor in their use is the rate at which any practical results are applied.

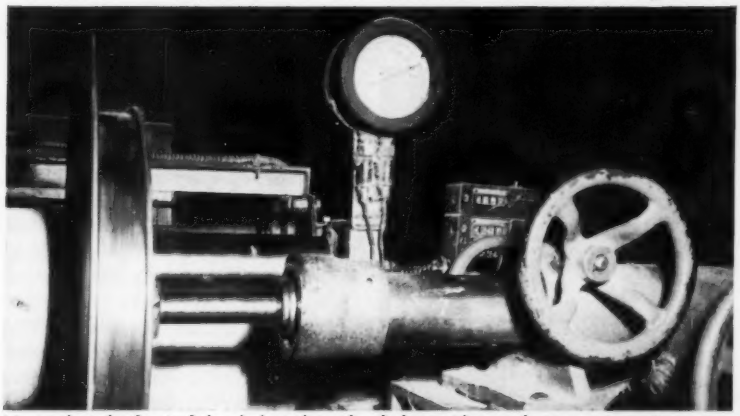
To aid in bridging the gap between this fund of scientific knowledge and the needs of the finishing industry, and to expedite its effective application, are the purposes of Extension. To achieve these goals, the Extension Service invites the cooperation of the finishing industry, in order to make an effective contribution to the continuing improvement in the quality of cotton products.

*From a paper presented at the 9th Annual Conference, Textile Division, American Society for Quality Control.



Installed five years ago, the drive unit of this slasher (on the floor beneath the lease rods) has given no trouble, plant operating executives report.

Mill puts OK on hydraulic slasher drive



Mounted at the front of the slasher where the slasher tender can keep an eye on it, a gauge reflects pressure at the variable delivery hydraulic pump. Pressure rises with slasher load (speed, etc.) and falls as power requirement is lowered. It can indicate system failure or such trouble as a dragging bearing. A pressure relief valve will operate to protect the system if pressure reaches 2000 psi.

Speed of slasher is infinitely variable and there is no preset creep speed. Unit can be run at any creep speed for any length of time.

Staff prepared Exclusive

THE OPERATIVE in a southern textile mill kept the "slow" button depressed until the slasher assumed an uncommonly low speed. He then made an end repair and depressed the "fast" button while the machine gained a bit more speed. His slasher was near the doffing point, but the adjacent slasher was already stopping for doffing, and to keep the two from standing at the same time he left his slasher running slowly and moved over to help his fellow operative doff the second machine.

The two men shortly returned to the creeping machine and examined the yardage counter. There were still several yards to go before doffing, so the operative pressed the "run" button and stood by as the machine accelerated smoothly until the moisture controls assumed command of slashing speeds.

As the cut mark was inserted, the operator depressed the "stop" button, an action that cut in a time relay to control the unit used to shift the hydraulic pump into its neutral position. Within five seconds the slasher came to a standstill with its 7½-hp electric motor still running.

Once the empty loom beam had been inserted in the head stock and the yarn sheet secured to the bare wooden barrel, the "fast" button was depressed to bring the speed up slightly to allow the tension to be set. This the operator did by feel, adjusting a hand wheel to get the required tautness.

By the time the beam diameter reached eight inches the operative had set the tension at its maximum. The soft start permitted the yarn sheet to cushion the beam barrel and prevent end breakage on the start-up. Once set, the tension would automatically die away enough to prevent rippling the under layers as the beam approached its maximum diameter. The change would be so gradual, however, that even the most experienced operative could not detect it.

With the tension set, the opera-

tive pressed the "run" button and watched as the slasher reached normal operating speed under the command of the moisture controls. Normal acceleration time from zero to full speed was approximately seven seconds, but this time is adjustable.

Variations of the drive permit the same accurate tension control on multi-head slashers. The unit also permits a slasher to be operated at creep speed indefinitely without damage to any part of the system. During such operations the electric motor, relieved of most of the work, "loafs" along, drawing a minimum of current.

Pushing the "fast" or "slow" button relieves the moisture controls of their duty and permits any speed to be selected between zero and that determined by the moisture controls; if the "slow" button is kept depressed, the machine will eventually stop; if the "fast" button is kept depressed, the machine speed will increase to that determined by the last setting of the moisture controls.

Still another speed control is exercised by pressing the "fast" button while pressing a second button on the moisture control cabinet to enable this slasher to assume speeds higher than those the moisture controls would otherwise permit.

For five years this unit has powered the slasher as it processed 17's to 30's, both single- and two-ply cotton and rayon, onto beams varying in width from 48″ to 82″ and carrying from 2,000 to 6,000 ends. It has remained trouble-free and still shows no visible signs of wear, not even an oil leak.

Maintenance has consisted of blowing the lint and starch from the various parts (as the slasher is stopped for any situation in which hard waste is made), changing the hydraulic oil yearly, cleaning the oil filter in kerosene every six months, and cleaning the air filter in the oil cooling unit each eight-hour shift. If this latter filter is left dirty, the only effect is a rise in the oil temperature within the system. The electric motor is given the same maintenance allotted to other electric motors in the plant.

The complete system fits under the slasher front directly beneath the lease rods. Mounted on boiler plate, it needs only to be moved into position and lagged down. Within four and ½ hours after the unit was wheeled into place alongside the slasher the plant's maintenance force had it in place and was checking out the hydraulic motors. Some wiring changes had been made beforehand.

This particular drive is neither the familiar fluid nor torque converter type of drive. It uses pistons to displace a given amount of oil and motors that, through their pistons, utilize the full displacement discharged by the pump. Thus the positive system uses the hydraulic press principle to translate rotary motion.

The electric motor supplying motive power for the slasher drives a variable delivery piston pump that supplies power to the constant displacement piston type motor that turns the delivery rolls (a side shaft from there drives the size box of the three-cylinder slasher). A second piston motor, a variable delivery type, supplies the power to the head stock. (See Figure 1 for details on pumping and power take-off principles.) The amount of oil pumped by the main drive determines the slasher speed.

The variable displacement piston motor that drives the head stock, and consequently determines yarn tension, is monitored closely by a tension regulator that senses

Figure 1. Schematic diagram of the hydraulic slasher drive

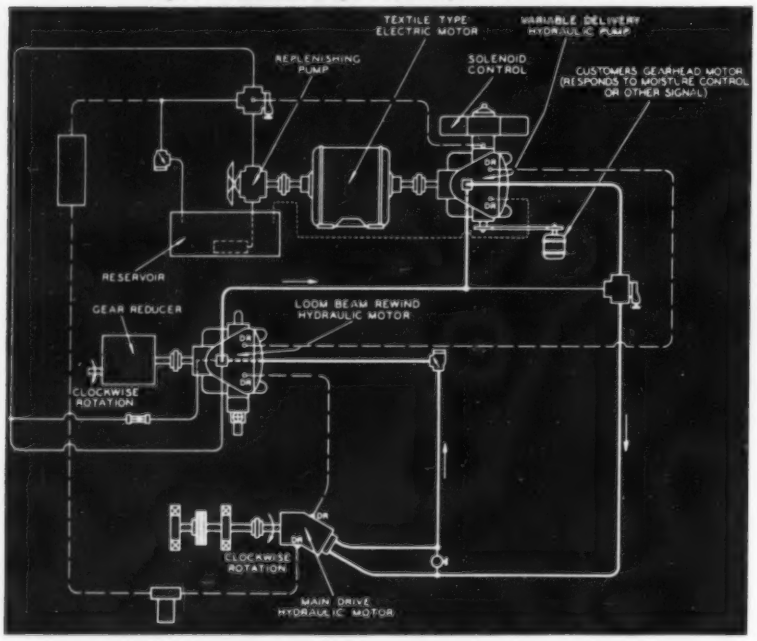
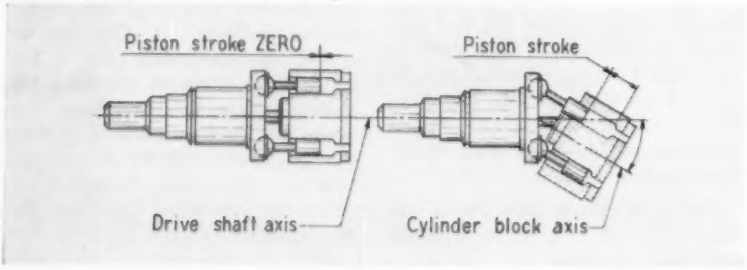
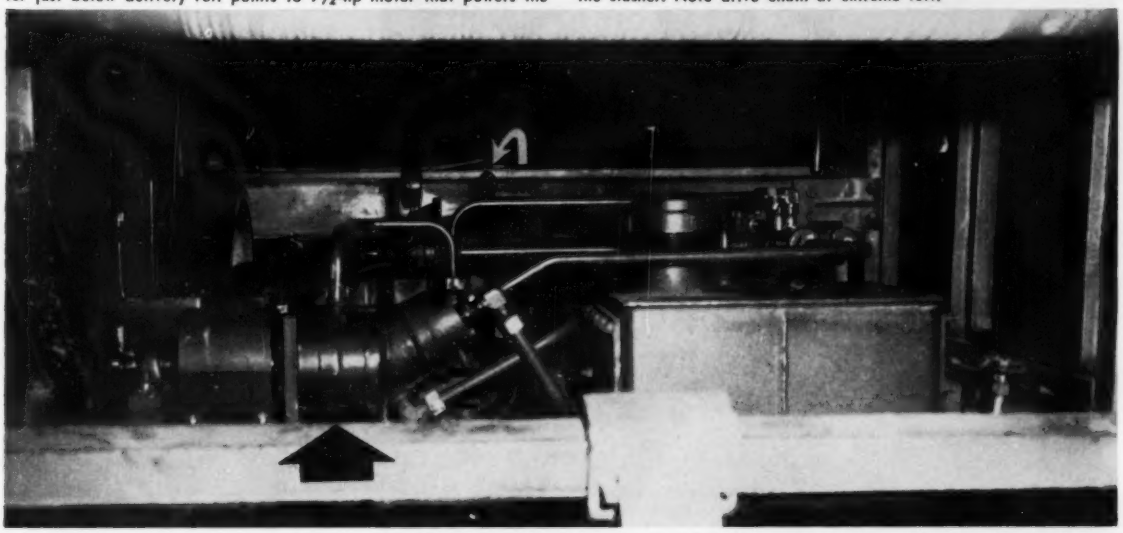


Figure 2. In the piston-type axial pump the multiple pistons are arranged axially and are reciprocated by the drive flange. The angular relation of cylinder block to the drive shaft axis determines the piston stroke and resultant delivery. Both motor and pump operate on the same principle, but there are minor design differences between them. It is through this efficient principle that the drive offers positive and exact control.



View of the drive from the front or delivery end of the slasher. Bottom of delivery roll is visible at top. Small white arrow in center just below delivery roll points to 7½-hp motor that powers the hydraulic drive. Large black arrow on slasher frame at bottom of photo points to the main hydraulically operated motor which drives the slasher. Note drive chain at extreme left.

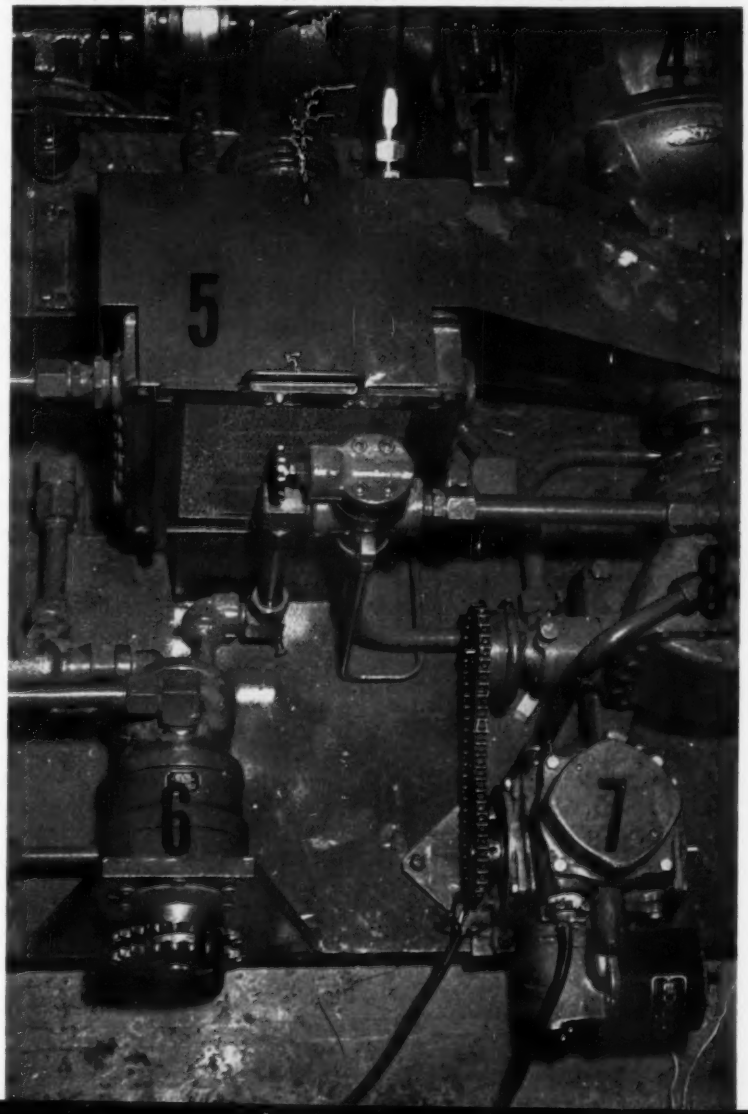


pressure differentials and relays its commands to the motor accordingly. The pressure differential is established when the operative sets the yarn tension, and when the regulator senses that the motor is straining too hard (its oil pressure rising) it reins in the over-eager unit to let up on the yarn tension. By the same token the regulator senses malingering and spurs the motor accordingly (the slave motor is obviously a good-natured cuss). This "horse and rider" combination can sense and correct for a slight eccentricity in the beam barrel and exercises adequate tension control whether the slasher is creeping or galloping.

The size box, instead of being driven through a side shaft, could be fitted with a third motor to make the system 100% hydraulic.

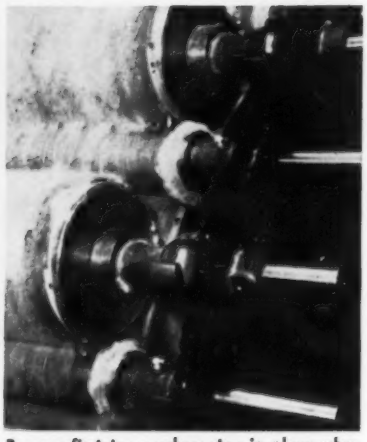
The moisture controls are connected to a speed control unit driven by a small electric motor. As the controls find the yarn getting too damp they signal the speed control unit to change the angle of the pump to cut down on the piston displacement and thus reduce the amount of oil the pump can move in unit time. This drop in oil volume decreases the speed of the two motors in the line. The reverse happens when the yarn becomes too dry. Of course, as has already been indicated, the system can be operated without the services of the moisture controls.

Overhead view of the system made during installation. Reference by number is: (1) oil filter; (2) worm gear reducer to take-up arbor; (3) hydraulic tension motor—variable delivery piston type; (4) 7½-hp electric motor; (5) air filter screen for cooling coils; (6) main drive motor (fixed delivery piston type); (7) speed control unit; (8) variable delivery hydraulic pump (piston type); and (9) main drive motor sprocket.



How to

Have waste which accumulates under cards removed regularly and often enough to prevent it being picked up by cylinders. This is the most common cause of woolen card wrecks, says the author who has spent 30 years in woolen card rooms.



Be sure first two workers stay in place when big lumps of stock reach them. One way is to put set screws in poppet heads.

by C. Jay William
Exclusive

EVERY woolen card room overseer knows how costly a card wreck or smash-up can be. Aside from the irreparable damage to the clothing, the hopelessly bent rolls that must be replaced, and the lost production time, permanent damage to the machine may result—damage that is not always apparent at the time of the incident. So, supervisors always must be on the lookout for ways to prevent them.

These observations, made during the 30 years the writer has spent in woolen card rooms, may prove helpful to others in avoiding wrecks.

Clean Under Cards Regularly. Of all the causes of card wrecks, the cylinder picking up waste is the most common. And, of course, systematic cleaning is the preventive for this.

Two men, under the supervision of a fixer, should stop one card at a time and remove all waste from under the machine. Before starting the card, the fixer should check all cross members of the frame for cleanliness, as waste left on them is an invitation to trouble.

How often should this cleaning be done?

That depends on the kind of yarn being made. If heavy yarns are being manufactured from low-grade stock, it may be necessary to clean out the cards twice on each shift. If fine yarns are being produced from high-quality blends, once a shift or even every other shift may be sufficient.

Downtime for cleaning can be reduced by having it done while the card is being stripped. It is a good idea for the overseer to post a daily stripping schedule to permit card operators to plan as many cleaning operations as possible to coincide with the stripping schedule.

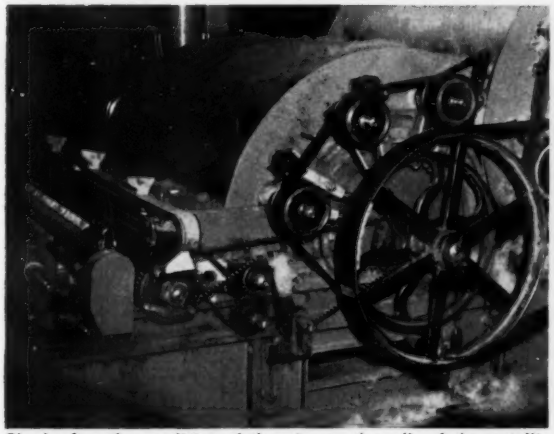
Keep Clothing in Good Condition. Permitting card clothing to deteriorate breeds wrecks. With weakened card wire on the cylinder and doffer, the doffer does not clear the cylinder as it should, and the cylinder rapidly piles waste on the floor. If this waste is not removed frequently, it is picked up by the cylinder and conveyed to the workers and strippers, causing these rolls to jump out of the poppets and wreck the machine, as mentioned previously.

Card smashes seem to occur more often when heavy yarns are being produced. It is on such work that the upkeep of the clothing is often neglected, but deterioration is much more rapid than when only fine yarns are being made.

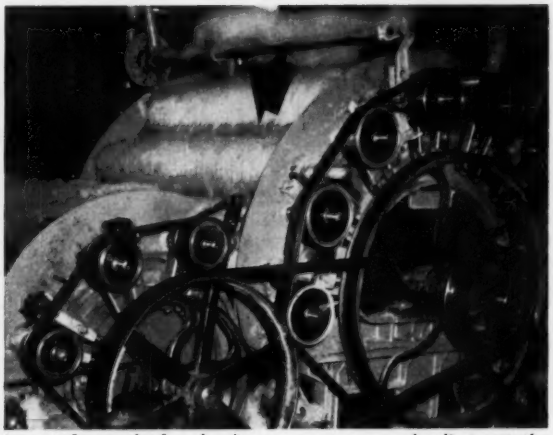
Check Breast Rolls Regularly. Most of the wrecks at the first breaker card are the result of damaged wire on the metallic breast. Tramp metal that escapes the magnet at the blending picker gets into the feed rolls and licker-in and flattens the wire. Consequently, hard lumps of stock are formed and jerked through the machine. If the lumps are too large for the metallic workers to "digest," they usually strike the first worker of the first breaker with such force that the roll jumps out of its poppets and causes a bad wreck.

Frequent checking of the metallic breast and either repairing or replacing the damaged rolls will prevent accidents from this source. In every card room there should be at least one spare licker-in and a set of feed rolls for such emergencies.

prevent wool card wrecks



Check often the condition of the wire on the rolls of the metallic breast. Most of the wrecks at the first breaker are the result of damaged wire on the breast rolls.



Inspect frequently for cleanliness, proper use, and adjustment the stripping apparatus. Permitting lint to accumulate as shown here, especially on the nozzle (black arrow), may cause a wreck.

The saw-tooth wire of the breast rolls often becomes filled with grease and broken burrs. With wire in this condition, the metallic breast does not afford so much protection to the clothing of the first breaker. Keeping the breast wire clean and sharp will also aid in avoiding wrecks at the first breaker.

Don't Let Clothing Break. The worst card smashes are those caused by broken clothing or by tacks in the tapered end of the clothing giving way and permitting the entire strand to peel off the roll. When this occurs, the broken strand seems to start a chain reaction involving all rolls on the card. Hardly a roll escapes some damage to its clothing, and the broken clothing wraps around some of the piled-up workers and strippers.

Use of tacks that are too short for the job will cause the tapered end of clothing to come loose. Also, the wooden plugs into which the tacks are driven may become worn out after long use and need replacement.

A break in the clothing usually occurs when the foundation becomes oil-soaked and partially disintegrated from long use. However, on rough, heavy blends good clothing on the cylinder of a first breaker may break from repeated blows of hard lumps of stock delivered to the machine by a metallic breast with damaged wire, as previously mentioned.

Check for Loose Clothing on Small Rolls. Worker clothing is sometimes loosened during the grinding operation by the drag of the grinding wheel against the wire. The foundation stretches and produces slack which creeps over to one end of the roll and forms a hump or blister. A 7″ x 48″ worker has 59′ of 1½″ clothing on it; so, if the clothing is stretched only 1/64″ per foot, nearly one inch of slack is created—enough to form a pronounced blister. Of course, larger blisters are formed on wider cards when the clothing creeps.

These blisters are not always visible, so every small roll should be checked (with finger tips) for loosened clothing after grinding. Rolls found to have loose clothing should be rewound. If a worker with loose clothing should be set back into the card, the cylinder wire would strike the blister and soon wear through the foundation at this point—result: a first-class smash.

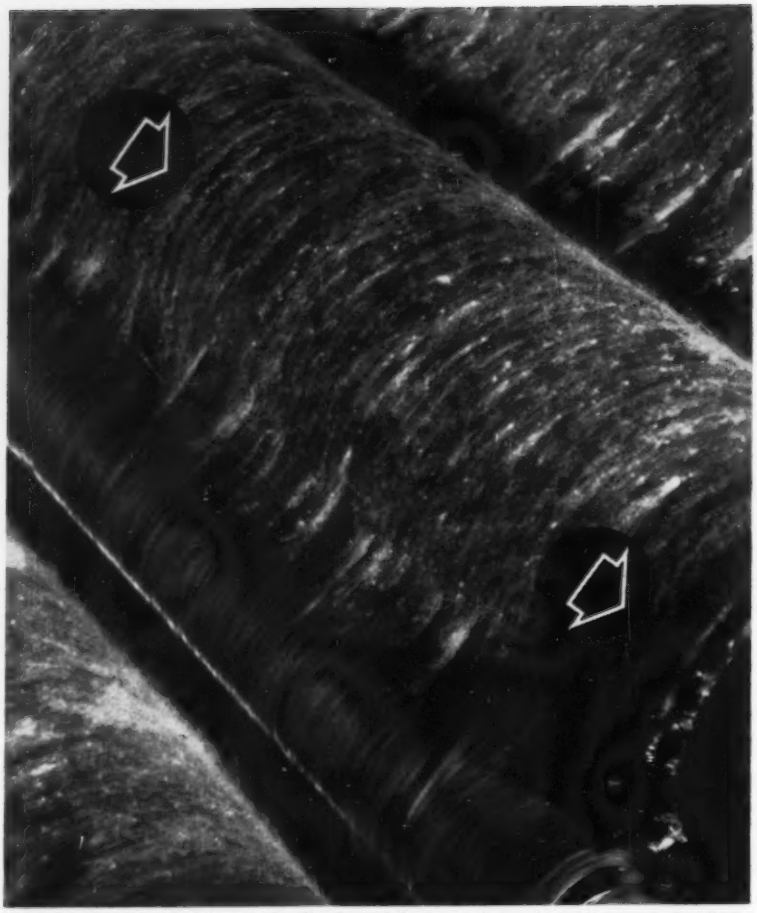
Fancy clothing may creep also, as there is a steady drag on its foundation. Creeping is experienced much more often with metal fancy rolls than with wooden ones. The heel or bottom of the wire staples sinks slightly into the softer surface of the wooden roll, helping to hold the clothing in place.

Less creeping of fancy clothing will be experienced if the roll is painted as follows: Apply the first coat and before it dries completely (still feels tacky) apply a second coat. Paint applied in this manner never dries thoroughly, but remains sticky. So, when clothing is applied to the painted surface, it is much more likely to stay in place.

Carefully Wind Clothing onto Rolls. The writer once took over a card room that had not been supervised properly. Card wrecks were occurring entirely too often.

A number of smash-ups had been experienced on one particular finisher card, and the cause had not been determined. One day it was noticed that a hard ball of lint was being formed between the in-

Check traveler adjustment regularly. Of course, width of sliver on table should never exceed width of the cylinder.



Keep an eye on the clothing of all rolls. One of the best safeguards against wrecks is a high level of clothing maintenance. Clothing on the worker pictured here could cause a wreck soon. Arrows point to trouble spots.

side stripper belt drive and the end of one worker. Inspection revealed that the cause of this was faulty application of the clothing to the worker—the wire had been brought too close to the end of the roll with the result that it extended beyond the stripper roll clothing. The excess wire had been bent, and the lint which was collecting on the rough end of this worker was being rolled into a ball by the stripper drive. When the lint ball became large enough for the cylinder to catch it, a wreck occurred.

This was either a case of a bad job of applying the clothing to the worker initially or a hurried job of redrawing the clothing after it was loosened by grinding.

Check Broad Band Feed Regularly. At the broad band feed, laying the sliver on the table in lengths greater than the width of the card cylinder creates a hazard. The surplus sliver at each end of the feed drops to the floor and piles up between the card frame and the edge of the cylinder. There is always danger that the cylinder wire may pick up a large mass of these sliver knuckles and hurl them into the worker.

Watch Vacuum Stripping Equipment. Lint collecting on a cylinder vacuum stripping spout is another hazard. If the stripper traverse motion is attached to the card frame so that there is only ¼" or less clearance between the spout and the stripper, lint will not gather on the tip of the spout —the teeth of the stripper clothing will keep this lint combed off.

As a further precaution, the stripping crew should be trained to always run the spout over to one edge of the cylinder after stripping. On the newer cards with close-in frames the stripping spout can be run to one side to completely clear the cylinder, but on older cards with inside drives this is not always possible.

Inspect Belts Regularly. Broken belts may cause bad wrecks. As a preventive measure, stripping crews should be instructed to inspect all belts while cards are stopped for stripping. On flat belts they should look for deep cracks and broken or worn lacing. Raveled edges of V-belts indicate trouble developing.

It is also a good plan for the card fixer or overseer to keep a record of the date of installation of each belt. By referring to this record the fixer will know which belts need watching. In some mills a large oil-proof tag fastened to the card frame is used for recording this information.

Check Card Before Adjusting Motor Overload Switch. The individual motor drive is, of course, a great improvement over the overhead or group drive, but it can do more damage when a card wreck occurs. Should a flat-belt-driven card jam, the belts will usually slip on the pulleys or run off, affording a measure of protection to the machine; whereas with an individual drive the motor may continue to run for some time, especially if the overload switch is not properly adjusted.

Once in awhile an electrician

will be called to the carding department because of excessive tripping of the overload switch on a card. Without much investigation or checking with the overseer, he will adjust the switch so that a greater overload will be required to make it stop the motor.

The overseer should not permit this. When an overload switch stops a card drive motor, it is usually the fault of the card—not the motor. So the card fixer should check the entire machine, determine the cause of the extra load being placed on the motor, and correct it.

Keep Employees Alert. There is always the human element to consider. Where labor turnover is large, wrecks are likely to occur more often. New, inexperienced employees must be thoroughly trained and reminded daily of the dangers involved in careless work.

Strangely enough employees with many years of experience often will be found guilty of carelessness. They are more likely to take chances. A bad card wreck which the writer once investigated was the result of carelessness on the part of a seasoned member of the stripping crew. When he started the card after stripping had been completed, he noticed that a worker bearing was resting atop its poppet head. Instead of stopping the card as he had been trained to do, he dropped the bearing into its proper place with the machine running, causing the wreck. This was a case where an experienced mill man took a chance, whereas a recently trained, new employee might have been more careful.

Posters on bulletin boards mounted over drinking fountains or at entrances to rest rooms are helpful in keeping employees alert. But use of the same posters month after month results in their becoming so familiar to the operatives that they lose their effectiveness. Change posters frequently to avoid this.

A Way to Keep Workers in Place. Since it is the first two workers on a cylinder that receive the hardest blow when big, hard lumps of stock enter the machine, these are the ones that first jump out of their poppets and carry other workers and strippers with them.

As a safeguard, drill and tap a hole for a ⅜″ set screw in the middle of and about ⅝″ down from the top edge of the poppet fork. Then run a set screw into the hole, tightening it so that its concave point makes a ring-shaped mark on the bearing. The mark should be at the center of the bearing where it is ribbed, or at its thickest point. Take the bearing off and cut a slot ¼″ deep, 7/16″ wide, and ¾″ long, with the top of the slot at the top of the set screw mark. Put the bearing back into position and insert a short, blunt set screw of such length that when it is screwed all the way in the point is well down into the slot but not tight against the bearing. This will allow the roll to rise at least ¼″ to soften an extra hard blow, but the roll will be held in place when the bottom edge of the slot contacts the point of the set screw.

From the foregoing it can be seen that the best protection against card wrecks is provided by keeping the machines in good condition (clothing and all other parts) and continuous vigilance on the part of the overseer and his assistants.

Pad-steam and pad-roll techniques for applying direct dyes to cotton

■ THE DU PONT pad-steam continuous dyeing process and the "Svetema" pad-roll dyeing machine (manufactured by A. B. Svenska Textilmaskinfabriken, Goteburg, Sweden and sold in the United States by a manufacturer's agent) both offer conditions that are suitable for the fixation of a number of direct dyes on rayon and cotton by a continuous or semi-continuous method, according to information contained in a recent issue of the "Dyes and Chemicals Technical Bulletin," a publication of E. I. du Pont de Nemours & Co., Inc. Following is an extract of the report:

The pad-steam process consists of padding a dissolved direct dye at a temperature of 140 F to 190 F, followed by steaming at 212 F or higher for a short period of time, one to two minutes, and finally rinsing.

The pad-roll process consists of padding as for the pad-steam process, preheating the padded material to dyeing temperature and then batching the hot, padded fabric on a roll inside an insulated, heated chamber. The temperature in the chamber containing the roll of cloth is maintained at 185 F to 190 F for approximately two hours or longer. The cloth is then removed and rinsed. While one roll is being developed in the chamber, other rolls can be padded and developed in similar chambers.

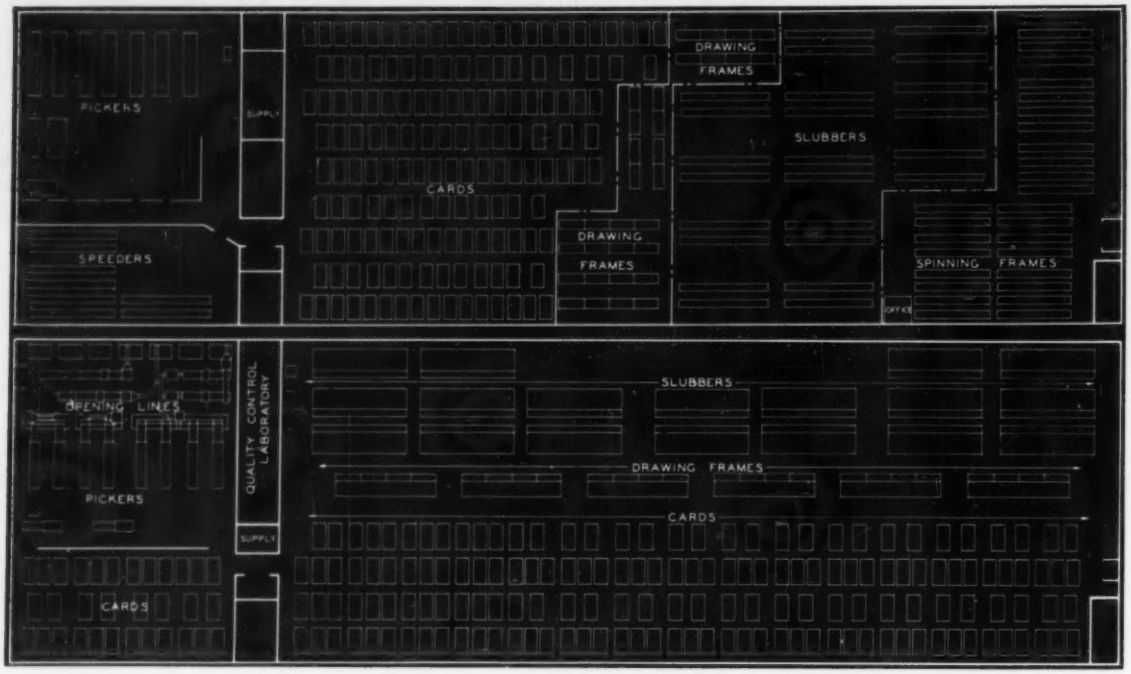
Almost all of the direct dyes can be developed or fixed by either process, provided the shade is light. In medium shades a number of dyes are applicable by both methods, and in heavy shades the pad-roll gives good results on a selected group of dyes that have good solubility.

As the depth of shade is increased, several factors begin to influence the results and prevent some dyes from being fixed or developed. Solubility is important because in these processes undissolved particles, once padded, never dissolve. Therefore, the dye concentrations must be below the solubility limits. Rate of dyeing, an inherent property of the dye, is extremely important and if dyeing time is not sufficient, fixation will not be complete.

Pickup has an appreciable effect on fixation by the pad-roll method. As pickup is increased, concentration of dye is decreased, thus allowing better solubility.

There are other factors, such as speed of padding, temperature of padding, and the type of fabric being processed, that have less but contributing influence on the results.

Eva Jane's basic picking and carding area before the conversion is at the top of this illustration. Her "new look" is in lower part.



"NOT A POUND WAS LOST"

while completely renovating Avondale's Eva Jane plant for denim production

Staff prepared Exclusive

NOT LONG ago Avondale Mills' management executed a changeover program for the Eva Jane plant in Sylacauga, Ala., to adapt the factory for all-out production of sport and work denims. When the final gun sounded, more than a year after the program began, not a single pound of production had been lost despite activity that included:

Moving opening room equipment from an adjacent building to the second-story picker room, placing the equipment nearer the fixer who maintains it, and doubling the number of bales laid down in opening; flooring the picking, carding, and spinning rooms; adding one picker; installing forty cards and equipping the entire card room with 15″ x 42″ cans and coilers;

Installing a lap conveyor line to transport laps from pickers throughout card room; discarding 24 10″ x 5″ slubbers and installing 18 new 12″ x 6½″ machines equipped with SF-2 drafting units; changing drawing facilities from 32 frames of six deliveries (two-process) to 24 frames of six deliveries (single-process) fitted with three-over-four drafting systems and equipping them with 14″ x 42″ coilers;

Discarding 76 warp spinning frames and equipping the remaining 112 with new double-apron drafting and larger packages (10″ stroke), open creels, and suction cleaning—also 50 filling frames were so treated, and the entire spinning room was changed to tape drive; discarding 650 looms and overhauling 570 of the 750 retained;

Overhauling the Type A and Type C spoolers and fitting them with larger pockets to receive the larger spinning packages; fitting a third cylinder to six slashers and placing new floors (subfloors as well) under them.

It should be added that the plant was equipped with an air changing system, that a resin curing oven that will evaporate more than 2½ tons of water per hour was installed, that weave room lighting was converted to give adequate illumination of the colored yarns, and that one four-kier and one two-kier stainless steel beam dyeing unit were placed in operation.

During the changeover every production unit in opening, picking, carding, spinning (warping and winding included) was relocated and all but 180 of the looms were repositioned. All floors were either replaced or refinished. Homogenizers were installed in the slashing department over a week-

end and were ready for operation on Monday.

The details involved were myriad, for before a single machine was discarded or a new one chosen, or a new location selected, its operation and its bearing on over-all production were carefully studied. Thus it is that the opening room now contains only blending feeders and stock.

Several additional feeders were installed to permit more careful blending of the five mixes now being run. As it now stands, any one of the three opening lines will process any one of the mixes. This is important to mill balance, since one of the lines feeds four of the eight pickers while the other two lines divide their attention equally between the remaining four machines. Later a fourth line will be added to permit an even split—one line to two pickers—but the added flexibility this would give is not pressing at present.

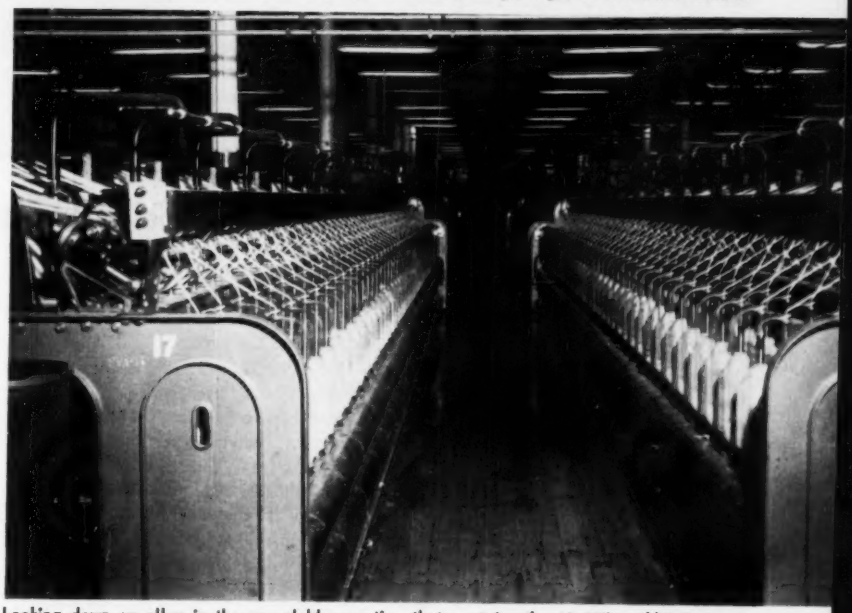
The 15″ x 42″ card coilers were purchased outright as complete units, not as parts for adapting the existing 12″ x 36″ to the larger size. The lap weight was retained at 55 pounds, and a conveyor system installed to transport those packages directly from picking to carding. The can sizes present no handling problems — they are pushed or dragged in the conventional manner. The forty added cards assist in handling the stock produced by the extra picker and to giving the required yarn quality.

The heavier yarns demanded by the denims (7s and 9.6s for the work denims; 14s for the sport fabric) dictated changes in package sizes. Thus the larger slubbers, cans, etc.

The drawing was switched from two process to single process with drafting systems that met managements' demands. These machines were raised six inches to receive the 42″ cans. The drastic reduction in the number of slubbers, drawing frames, spinning frames, looms, etc., has already been pointed out. Doubling has been minimized.

The spinning frames were operating with a double-apron draft system which were discarded for a second system also using two

Lap conveyors in the new card area bring the 55-lb packages right to the card tenders.



Looking down an alley in the new slubber section that contains the 18 12" x 6½" frames.

Rebuilt looms, fitted with 28" beams and sitting on a new floor, pour out acres of denim.

aprons. But the change was made only after several systems had been evaluated for simplicity, ease of cleaning, yarn uniformity, breaking strength, etc. The frames also were fitted with open creels to receive the larger roving packages and were raised several inches to permit the lifting rods to swing through the added arc demanded by the new spindles. The present bobbins have a 10″ traverse.

Every spinning frame motor now is housed beneath the frame it powers, considerably relieving alley congestion and cleaning difficulties. The remaining 112 warp frames (4″ gauge, 204 spindles, 2½″ rings) and 50 filling frames are fitted with pre-lubricated ball-bearing spindles with tape whorls, suction cleaning, and oilless cap bars. The warp yarns they produce are lowered two floors to the spooling and warping areas by a reciprocating elevator that dumps its load on a conveyor and returns automatically to the spinning level.

One weave room originally contained 420 40″ Model E looms. These were dismantled down to the frame, and parts were steam cleaned and painted. On an assembly line basis the looms were rebuilt, fitted with 28″ beams (replacing a 22″ size), adapted to 8¾″ quills, motorized, equipped with No. 10 selvage motions, and were given clock spring harness motions before they were returned to production. As many as eight looms per day were so treated. Only 300 looms were returned to the room which held the 420.

The loop dryer previously mentioned was designed to process 100 yards of fabric per minute (5400 pounds of water per hour is evaporated). It is a 10-fan unit containing two 4,000,000 Btu (per hour) burners. The original fan drives were replaced with V-belt drives.

This is not the complete story, for Eva Jane performs all manufacturing process, finishes its own fabrics, and packages some of its goods for over-the-counter use. A complete study of the plant is completely beyond the scope of this article.

Denim shades are matched as the bolts pass by on a conveyor. The person responsible for this operation never has to lift a package. He marks the bolt with shade and length and permits it to pass to the shipping department for packing, storing, and shipping.

Clean wool yield placed at 2.86 billion pounds

■ A SURVEY of the world wool situation indicates that for the 1958-1959 season output will total 2,299,000,000 pounds (clean basis) of apparel wool and 566,000,000 pounds of carpet wool, Textile Economics Bureau, Inc., reports in its statistical bulletin, "Textile Organon." Furthermore, the Bureau estimates that 56 per cent of the apparel wool will be of the crossbred type and 44 per cent Merino wool.

This season's clean or scoured yield represents about 58 per cent of its greasy equivalent, which is consistent with this ratio over recent years, according to the report.

In a comparison of the major competing fibers, the Bureau points out that cotton represented 66 per cent of the total world fiber output in the calendar year 1957, with production at 18,482,000,000 pounds. Wool production in the same period came to 2,864,000,000 pounds or 10.5 per cent of the total. Man-made fiber output in that same year amounted to 6,339,000,000 pounds or 23.5 per cent of global fiber production. Total fiber output was 27,685,000,000 pounds.

Compared to the prewar 1935-1940 period, some significant changes are apparent, the report states. In the earlier period, total output of the three fibers averaged 17,773,000,000 pounds annually, of which cotton represented 13,800,000,000 pounds or 77.5 per cent, wool 2,296,000,000 or 13 per cent, and the man-made fibers 1,677,000,000 pounds or only 9.5 per cent.

Do you buy for your mill? Here's food for thought

■ THE TEXTILE industry can learn from experience of other industries, according to William M. McNeill, division manager in the general purchasing department of Union Carbide Corporation, by encouraging purchases on the basis of the following points, listed in order of importance:

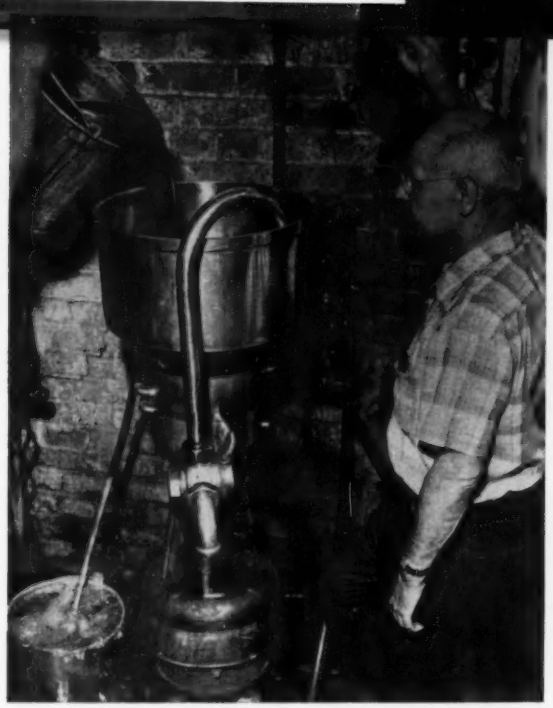
1. Quality
2. Availability
3. Price

"I know of no concern that is not willing to pay a fair price for a needed item," said Mr. McNeill, "and a little more statesmanship on the part of both buyers and sellers in the textile industry would go a long way toward improving profits all around."

Speaking recently to the New York Alumni Chapter of Phi Psi Textile Fraternity, Mr. McNeill, pointing out that purchasing agents have excellent selling opportunities and should take advantage of them, said "If I cannot convey to a salesman the idea that my company is an excellent outlet for his materials, then I'm falling down badly in my job. I want the salesman who calls on me to bring the new item, the new service, the new idea to me first—before he takes it across the street to my competitor."

Drawing a parallel between selling and buying, the main speaker said that a purchasing agent has the same public relations job as a salesman: he must create good will for his company. "A competent purchasing agent —whether he be in the textile industry or anywhere else—has more tools in his kit than a chisel," Mr. McNeill concluded.

[*This is a refreshing point of view on purchasing. See also the special purchasing feature in the February, 1959, issue of* TEXTILE INDUSTRIES, *pp. 93-104.—The Editors*]



Colloid mill is started by the author as the disperse dye paste is poured into the mill hopper. Homogenization begins immediately.

How to cut your dye mixing time

Colloid mill cut mixing time of disperse dyes from hours to minutes

by Maurice Curtil
Head Dyer
Virginia Dyeing Corp.

Exclusive

ACETATE dye mixes are among the most difficult dyes to prepare properly. To the dyer, these finely-ground dyes mixed with water present serious problems due to the occasional presence of lumps and specks and a tendency to segregate. Effective dispersions have been difficult to obtain.

To further magnify these problems, many dyehouses are still using mixing methods that are primitive in comparison with other operations within the plant. These methods are often costly, both from the point of time and labor spent in mixing and from the erratic results usually obtained.

Mixing By Hand Is Inefficient. The most common method of mixing powdered dyes has been to make a paste of the dye added to water. This is then mixed until thoroughly wetted. Then the paste is hand-squeezed through fine-mesh cloth screens to remove lumps and agglomerates. This is done repeatedly until it is presumed that the paste does not contain any specks larger than the perforations in the cloth. The paste is then mixed with the water to obtain the required volume of dye solution.

The trouble here is that hand-mixing takes too much time, requires too many men, and does not completely eliminate troublesome specks and spots which show up later on pad-rolls and jigs to ruin cloth. In addition, after each batch of dye paste is mixed, these cloth screens must be washed out thoroughly to remove all traces of dye from the previous batch.

Another important factor is dispersion of the dye particles evenly throughout the paste. To get maximum color yield and uniformity, these dye particles must be evenly distributed throughout the paste, avoiding spotty concentrations. With hand-mixing, this is next to impossible.

Our Dye Pastes Are Homogenized. The Virginia Dyeing Corp, Emporia, Va., now uses a colloid mill to prepare dispersible-type acetate dye pastes for dyeing flat synthetic piece goods. This colloid mill is a specially designed unit for the reduction of water-mixed powders to ultimate particle size by a homogenization process. That is, each and every particle of dye is efficiently dispersed throughout the batch to form a homogeneous mass of evenly distributed particles of dye. This dispersion is accomplished in minutes compared to the hours formerly needed.

Here's how it works: First, dye powders are measured out in a scale to the exact amount specified by the formula. Then these are added to a small volume of water and premixed to form a paste. This paste is then poured into the stainless steel hopper of the colloid mill and the machine turned on.

At the bottom of this hopper, a

Homogenized paste is discharged into container for dilution to final volume. Mill is cleaned by simply flushing while operating.

rotor-stator device draws the material into a "homogenizing zone" where it is subjected to forces of mechanical and hydraulic shear and then pumped through a recirculation tube back to the hopper of the colloid mill. This action continues until all the material has been passed through the homogenizing zone. The homogenizing time depends on the concentration of powders in the water volume, but in no case does it exceed thirty minutes.

After the paste has been fully homogenized, the contents of the colloid mill are drained off into a container for mixing into dye solutions.

As an example of the efficiency of the colloid mill, let's take an acetate dye formula which requires a high degree of homogenization. In this formula, for a pad-roll, 68 lb of acetate blue, 95 lb of acetate yellow, and 11 lb of acetate orange are combined and mixed into a water volume of 30 gallons. Thus, 169 lb of dye powder must be thoroughly dispersed into 30 gallons of water and the paste must remain free of all lumps and specks.

In the colloid mill, this formula requires about thirty minutes to complete the cycle and then it is drawn off and mixed with 160 gallons of water to form the final pad mix volume. Effective dispersion by the colloid mill gives us a final dye solution of about 75 grams of dye per liter.

How Colloid Mill Works. The most important feature of the colloid mill is the high speed rotor and stator assembly located in the base of the mill hopper. This rotor and stator are separated by micrometer - adjustable clearances. For our dye formulas we maintain a standard clearance of 0.002 inches.

The dye paste is poured into the mill hopper and enters the first stage of action in the homogenizing zone, a term covering the area where the forces of the rotor and stator come to bear on the material. In the first stage, the paste is broken up into minute globules by the upper turbine blades of the rotor, whirling at high velocity.

The second stage consists of drawing these globules through the minute clearances between the rotor and stator. At this middle portion of the homogenizing zone, the rotor is equipped with serrations or "teeth" which set up and maintain a mechanical shearing action. Next, the material is subjected to hydraulic shear by the smooth, stellited lower part of the rotor.

Finally, the lower discharge turbine subjects the material to a high velocity discharge and the end result is a completely homogenized paste. This is then recirculated through a tube up to the mill hopper. To drain off the homogenized paste, a drain valve is provided at the base of the hopper.

Cleaning of the machine is a simple matter, quite unlike the tedious job of rinsing out cloth screens. After a formula has been processed, water is then dumped into the hopper, the machine is turned on, and the water recirculated until it flows clean. This takes about two or three minutes and the machine is ready for reuse.

The colloid mill is indispensable to our dyeing operation. Besides the major benefits of time savings and reduced man hours, freedom from troublesome dyeing problems such as spotting and color variation means that we can easily maintain the quality of our dyed fabrics.

Our workers, too, benefit from the simplified dye mixing process. They no longer need to spend hours at the tedious job of screening dye pastes, a messy chore is eliminated, and clean-up is now only a matter of recirculating water through the colloid mill to clean it.

Finally, the simplicity of the colloid mill assures dependable day-to-day operation. Our unit has been in use for over a year now, working intermittently over a 24-hour period, five days a week. In this time, we have had no maintenance problems.

Improved wash-wear finish for cotton developed

■ AN ORGANIC phosphorus compound called APO may hold the answer to improved wash-and-wear cotton garments, the U. S. Department of Agriculture announces.

Investigations by the Department's Agricultural Research Service show that the compound is highly resistant to damage from chlorine bleaches, which are commonly used in both home and commercial laundering. It also gives cotton outstanding crease retention and wrinkle resistance. Changes in the hand of the fabric are slight, and the treatment is far more durable than other known wash-wear finishes.

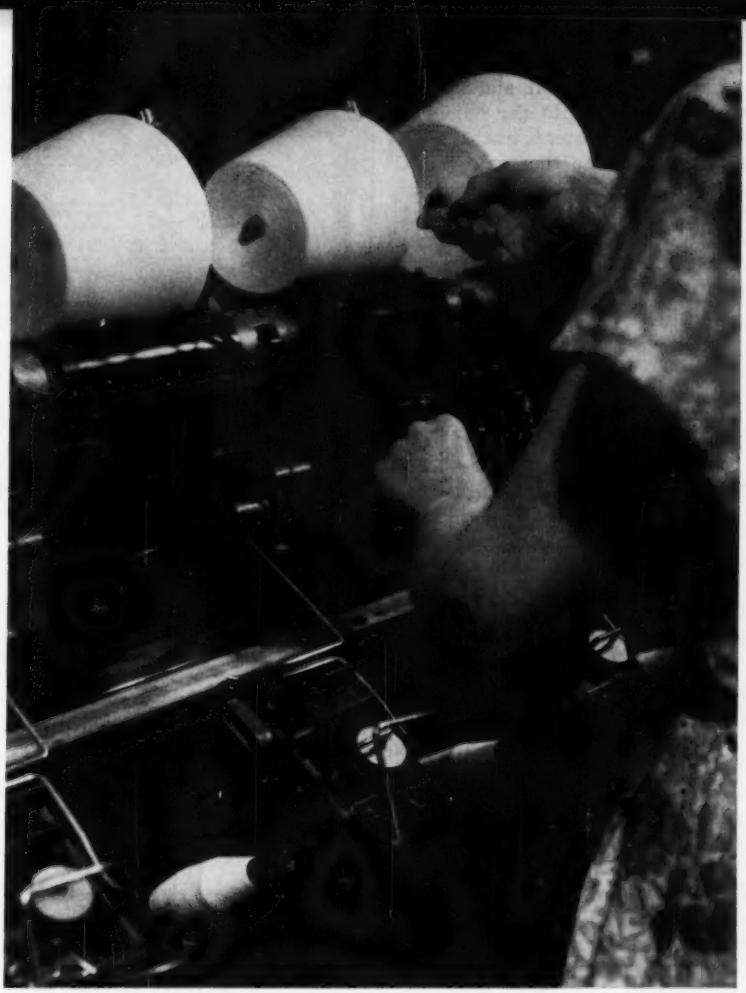
In addition, treatment with this product increases flame resistance of the fabric to some extent, depending on the amount added, and on the construction and weight of the fabric. However, small amounts will change the burning characteristics of the fabric, and afford some protection to the wearer.

Currently, the cost of APO (most of the chemical used in the United States is imported) is the major obstacle holding back commercial adoption of this new treatment, USDA says. Limited production of the compound by two U. S. firms indicates it can be produced at lower cost in this country. Other U. S. companies have expressed interest in producing it.

Scientists at the ARS Southern Utilization Research and Development Division in New Orleans did their first work with APO—chemically, tris (1-aziridinyl) phosphine oxide—while seeking ways to make cotton flame resistant. During the course of their experiments, chemists G. L. Drake, Jr., and J. D. Guthrie noted that treated cotton samples had excellent wrinkle resistance. Further checking showed APO-treated cottons had better crease retention and wrinkle resistance than most of the present commercial wash-wear cotton fabrics.

The finish is applied by dipping the cotton fabric into a water solution of APO and removing the excess by passing the fabric between pressure rollers. The cloth is dried at temperatures between 175 F and 195 F for four or more minutes depending on its weight, and then cured at about 285 F for four minutes.

Cyclic vs Random Servicing



Optimum assignments may be calculated with minimum time study

by T. F. O'Connor
Exclusive

HOW MANY machines should an operator tend, and how should he service them? On a fixed schedule? At random? These are questions which have to be decided every day, and yet there does not seem to be very much material published which is helpful to the engineer or manager who has to make the decision.

To be more specific, consider winding spindles. They have short service time and long running time, and therefore are usually assigned in number to one operator. But how many, and on what servicing plan?

Stop-watch studies may be used to determine the times in question, but beyond this point there are many complicating factors. The following is an attempt to devise a method for handling these in order to arrive at a logical solution.

In the particular case calculated, it is found that cyclic servicing operates more cheaply per unit produced than random servicing. This does not mean that it is always so. With different figures the answer may be different.

The method of attack is quite general and may be applied not only to other winding situations, but also to any situation where a multi-machine assignment is involved (examples—weaving, spinning, knitting, braiding, and so forth).

The Problem Outlined. The case considered is drum winding. Winding spindles 10" apart are carried on a common frame, but each spindle runs and stops independently of the others. The operation is one of winding of cotton yarn (16s) from bobbins onto cones. Ideally, once a full bobbin is loaded, the spindle will run without interruption until the bobbin is empty and then stop. The operator replaces the empty bobbin with a full one and the winding is resumed.

A cone in the present example takes the yarn from 12 bobbins. When the cone is full, it also is removed and replaced with an empty one, but as this is done on a bobbin change, there is no additional stop for the purpose.

Under these ideal conditions, there would be little difficulty in figuring how many spindles an operator could tend without loss of spindle efficiency, but such ideal conditions are not met in winding cotton yarn. Invariably there are random factors which upset the pattern and impose an unpredictable sequence on the operations.

There may, for instance, be mechanical troubles, or package size variation, or yarn breaks. Whatever the factor, its rate of occurrence (average) can be determined

by patient observation, and thus it can be brought into the calculations. In the present instance, so as not to obscure the main point with too many details, only one such factor will be used, and its treatment will be typical of them all. Elements pertinent to the problem follow:

Material—16s cotton yarn
Net bobbin weight—0.25 lb
Net cone weight—3.0 lb
Winding speed—550 ypm
Yarn break frequency (average)—once per five bobbins
Bobbin changing time—0.116 min
Cone changing time—0.110 min
Average time to repair a break —0.076 min
Overhead per spindle hour (operator's hourly wage taken as 1.0) —0.04
Operator's personal time allowance—15%

Spindle Stopping Time. On any discontinuity in the yarn, caused either by a break or the emptying of a bobbin, the cone and the spindle carrying it are automatically lifted clear of the driving drum. The operator cannot work on the spindle until it has come to rest, but the cone may not be stopped or slowed down either by hand or by mechanical means. It has to run down naturally, and this takes extra time which for all practical purposes is winding time. Therefore it is added to the winding time.

It is important to make sure it is so added for every stop, not just those involving a bobbin change. For instance if there is a break on one bobbin in five on average, then there are one and one fifth stops (1.2) on average per bobbin (five bobbin changes plus stopping time for one yarn break), and the overrun allowance of .25 min per stop becomes .30 min per bobbin wound (.25 x 1.2).

Overhead. This is the total annual burden carried by the winding section divided by the number of spindles and by the number of hours worked per year. It is the cost of keeping one spindle in use for one hour. For convenience it is expressed in terms of the operator's hourly wages. In this case it is 4 per cent or .04 if the operator's pay is denoted by 1.0.

Cyclic Servicing

A	$= nE$	f	$= b + \sqrt{d}$
E	$= 1 - \frac{s}{2n}$	s	$= \frac{f}{2a}$
a	$= q\,t$	H	$= 4\,q\,w$
b	$= 2\,q\,n\,(t\text{-}w)\text{-}120$	G	$= q(2t\text{-}w)$. Closed circuit
c	$= 4\,q\,n^2w$	G	$= 2q\,(t\text{-}w)$. Open circuit
d	$= b^2 + 4ac$	w	$= 0.005L$

Random Servicing

A	$= \frac{n\,y}{1 + pny}$	J	$= 0.001L$
E	$= \frac{A}{n}$	p	$= \frac{q(t + w)}{60}$

A — number of machine running hours expected on averages from the n machines in one hour. Determined by formula, but for this study is taken directly from Table 1 (on page 84) for use in random servicing.

E — spindle efficiency—the number of spindle running hours produced per hour per spindle.

q — average number of stops per machine (spindle) running hour.

t — average time per stop (minute). Both q and t obtained by time study.

L — distance in feet from center to center of adjacent machines.

s — average number of stops encountered per patrol.

w — (cyclic) is the time (minute) taken by the operator to walk from one machine to another.

w — (random) is the average time (minute) to walk to a stopped machine and is obtained by time study.

n — is the cost (other than the operator's wages) of keeping one machine in use for one hour. It is expressed in units of an operator's hourly pay. **Example: If the cost equals 6.4 cents per hour and hourly pay is $1.60, then** n equals $0.064/1.60 or 0.04. The constants a, b, c, d, f, G, H, and J are derived from the others already listed and need no further definition. They represent merely intermediate steps.

y — is the number of stops (average) which have to be attended between two consecutive spells of "all machines running."

p — cycle ratio—operator's total work and walk time per spindle running hour divided by 60.

Figure 1. Formulas for cyclic and random servicing.

Allowances. Nine minutes per hour on an average, allowed for relaxation and for cleaning, equals 15 per cent of total time. During this time the machines are shut down. Other methods of effecting allowances would require different treatment in the calculations.

Other Considerations. The operator has to deal with both types of stoppage—the more-or-less regular and the random. He can use any one of several routines in doing so. The two best known, and the two which are to be compared in these notes, are the following:

Random Servicing. The operator goes to the nearest stoppage. If he has time between stoppages, he will either patrol, go to a central location to await the next call, or go to an area where he anticipates a call.

Cyclic Servicing. The operator moves in one direction along the line, servicing each stoppage as he reaches it, never turning back. Only on reaching the end of the line does he turn. Then he walks back to the starting point doing no work on the way.

After that the cycle is repeated. The layout of the machines might be such that the end of a single walk along the complete array of spindles would find the operator back at the starting point. So to distinguish this layout from the other it will be called the *closed*

Department _____
Machines _____
Date _____
Engineer _____

Cyclic Servicing

LINE	FORMULA						
1	n (TRIAL)		30	35	39	40	45	47
2	Gn	[G = g(2+w) = 2.53]	75.9	88.5	98.6	101.2	113.85	119
3	b = Gn - 120	[b = 2.53n - 120]	-44.1	-31.5	-21.4	-18.8	-6.15	-1
4	b^2		1945	993	459	354	37.8	1
5	n^2		900	1225	1521	1600	2025	2209
6	c = Hn	[H = 4gw = 0.1872]	168	230	285	300	380	413
7	4ac	[4a = 5.248]	883	1200	1492	1570	1985	2165
8	$d = b^2 + 4ac$	[LINE 4 + LINE 7]	2828	2193	1951	1924	2023	2166
9	$\sqrt{d}$		53.1	46.8	44.1	43.9	45.0	46.5
10	$f = Gn + \sqrt{d}$	[LINE 3 + LINE 9]	9.0	15.3	22.7	25.1	38.8	45.5
11	$s = \frac{f}{2a}$		3.43	5.82	8.64	9.56	14.8	17.3
12	$\frac{s}{2}$		1.715	2.91	4.32	4.78	7.40	8.65
13	$A = n - \frac{s}{2}$		28.285	32.09	34.68	35.22	37.60	38.35
14	un	[u = 0.04]	1.20	1.40	1.56	1.60	1.80	1.88
15	un + 1	[LINE 14 + 1]	2.20	2.40	2.56	2.60	2.80	2.88
16	unit cost = $\frac{1+0.04n}{A}$	$[\frac{\text{LINE 15}}{\text{LINE 13}}]$	0.0778	0.0748	0.0739	0.0739	0.0745	0.0751

Random Servicing

1	n	30	33	36	37	39	42
2	w = 0.000833n	0.0250	0.0275	0.030	0.0308	0.0325	0.035
3	t + w	0.1420	0.1445	0.1470	0.1478	0.1495	0.1520
4	g(t+w)	1.593	1.620	1.650	1.658	1.680	1.705
5	$p = \frac{g(t+w)}{60}$ $\frac{\text{LINE 4}}{60}$	0.0266	0.0270	0.0275	0.0276	0.0280	0.0284
6	A (from table 1)	27.725	29.917	31.730	32.252	33.046	33.893
7	un (u = 0.04)	1.20	1.32	1.44	1.48	1.56	1.68
8	un + 1 (LINE 7 + 1)	2.20	2.32	2.44	2.48	2.56	2.68
9	Unit cost = $\frac{1+0.04n}{A}$	0.0794	0.0775	0.0769	0.0769	0.0774	0.0794

COLLECTION OF VALUES APPLICABLE TO THIS PROBLEM

g = 11.23	b = 2.53n - 120
t = 0.117	c = 0.1872 n^2
q = 1.312	w = 0.000833n (random servicing)
2a = 2.624	w = 0.00417 (cyclic servicing)
4a = 5.248	H = 0.1872
J = .001 L = 0.000833	u = 0.04

Figures 2 and 3. The upper work sheet, Figure 2, is used for comparing the unit costs according to spindle assignment (Line 1) when cycle patrolling is used by the operator. The lower portion is used when the operator patrols at random, starting any spindle he finds idle regardless of its position on the job. The two systems use several quantities in common (q, t, L, and u). The first two quantities, q and t, are found by time study. With them available, trial assignments may then be worked out on paper to find the spindle assignment resulting in the lowest unit cost. The terms in brackets are put there to help the reader make the substitutions necessary to obtain the figures in the squares. The formulas must be used in the order given.

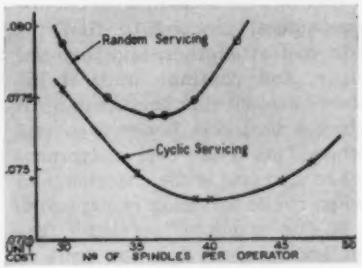


Figure 4. This graph reflects the unit costs from Figures 2 and 3. Since the costs contain no operator allowances they are rather optimistic and are useful for comparative purposes only.

circuit layout; the other will be the *open circuit*. The present calculations refer to the open circuit layout, but a simple change (which will be indicated) will take care of the other type.

Approach to Problem. There are four stages in the attack on the problem:

1. To find the assignment which will give the lowest cost per unit produced when using the cyclic method of servicing
2. To do the same for the random method
3. To choose the better of these two "bests"
4. To calculate standards for task (or quota) and cost.

These are explained in the order named:

1. Unit cost equals hourly cost divided by units produced per hour. Hourly cost has only two components—operator wages and the overhead carried by the spindles in his assignment. The operator gets one hour's pay per hour, or 1.0. The overhead per spindle is given as 0.04 hours' pay per hour, making 0.04n for the whole assignment (n is the number of spindles the operator has to tend). Total cost of one hour's operation is $1 + 0.04n$.

The number of units produced per hour by the average operator will be obtained through formulas devised by the author [see *Figure 1*]. Unfortunately these are cumbersome, but there appears no other way.

In these the unit of production is the amount which would be produced by one spindle running for one hour nonstop—more simply the unit is the spindle running hour (srh). The average or standard operator produces A of these units per hour on average from his n machines.

The cost per unit produced is the result of dividing the total cost of one hour's operation $(1 + 0.04n)$ by the units produced (A). Or

$$\text{Unit cost (U.C.)} = \frac{1 + 0.04n}{A}$$

for any assignment n.

Having found the unit cost at one assignment, proceed to find the unit cost at another, and then another, and continue until it becomes evident that one assignment gives a unit cost lower than any other. This is the best assignment when unit cost is the criterion, and when cyclic servicing is employed.

2. For random servicing the method in general is the same as above, but the calculation of A is done differently, as described below.

(a) Calculate the operator's total work and walk time per srh

(b) Divide the result of (a) by 60. This gives the cycle ratio, p.

(c) Use p and a value of n to find in the O'Connor-Ashcroft table the A value for that n. (The table was introduced to readers of TEXTILE INDUSTRIES in January 1957, p. 88, and the part of the table required in the present example is shown here). Use interpolation where necessary.

(d) Proceed again as described to arrive at the best assignment. This is the best for random servicing.

3. Plot a graph of costs vs. assignments which will help to show trends and pinpoint the optimum condition. It should be noted that these costs are a little optimistically estimated since no account has been taken yet of the operator's allowances. The allowances are common to all assignments and so do not affect the comparison. This is shown in *Figure* 4.

4. Finally, having chosen the best assignment (and servicing routine) apply the allowances and calculate standards. The calculations for determining spindle assignment follow.

Calculations. From the given information, it is necessary to extract w, t, and q—w is the average time in decimal minute to walk from one spindle to the next in cyclic servicing. Arbitrarily a time allowance of .005 minute per foot is made, so that .00417 minute is the allowance for 10". In random servicing w will represent the average walk time per stop and in this example will be figured as .000833n.

The average time in minutes expended by the operator on one stop is represented by t. To get this average time, calculate the amount of time spent on stops per bobbin and the number of stops per bobbin, and divide the first by the second. The calculation is shown:

Change bobbin 0.116 min each time (0.1160 min per bobbin); change cone 0.11 min (once in 12 bobbins or 0.0092 min per bobbin); repair break .076 min (once in 5 bobbins or 0.0152 min per bobbin). Total per bobbin is 0.1404 min. Stop to change bobbin occurs once per bobbin or 1.0 stop per bobbin; repair break occurs once in 5 bobbins or 0.2 stop per bobbin. Total stops per bobbin—1.2.

(Note that "change cone" does not appear in the number of stops since this does not involve a separate stop being done on a bobbin change.) Average time per stop (t) is 0.117 min.

The average number of stops per spindle running hour (srh) is represented by q. The number of stops per bobbin has just been found (1.2). It is only necessary to calculate how many bobbins are wound per srh and multiply that quantity by the number of stops per bobbin. The answer will be q. Here are the calculations in eight steps:

1. Weight of yarn per bobbin = 0.25 lb
2. Length of 16s yarn per bobbin (0.25) (84) (16) = 3360 yd
3. Winding speed = 550 ypm
4. Winding time per bobbin 3360/550 = 6.11 min
5. Time lost stopping (0.25 min per stop x 1.2) per bobbin = 0.30 min
6. Effective winding time in min per bobbin (item 5 plus item 4) = 6.41 min
7. Bobbins wound in 60 min at 100% (60/6.41) = 9.35
8. Stops per srh (item 7 x 1.2 stops per bobbin) or q = 11.23

Both q (11.23) and t (0.117) are used in cyclic and random servicing, and calculations for both types follow:

Cyclic Servicing. Values for the constants a, b, and c may now be determined (all formulas are grouped in Figure 1 as a reader aid).

$a = qt = 11.23 \times 0.117 = 1.312$ min per spindle running hour.
$2a = 2.624$; $4a = 5.248$.

$b = 2qn(t-w) - 120 = 2 \times 11.23 \times n \times (0.117 - 0.00417) - 120 = 2.53n - 120$

$c = 4qn^2w = 4 \times 11.23 \times n^2 \times 0.00417 = 0.1872n^2$

Enough information has now been gathered to permit trying several assignments such as are illustrated in *Figure 2.*

Random Servicing. The cycle ratio p, given by the formula:

$$p = \frac{q(t + w)}{60}$$

is the fraction of an hour the operator works on stops per hour of machine time. It is used in random

TABLE 1

Table of Values of A—Random Servicing

	p (cycle ratio)						
n	0.024	0.025	0.026	0.027	0.028	0.029	0.030
29	27.337	27.185	27.022	26.847	26.659	26.457	26.241
30	28.198	28.028	27.844	27.646	27.433	27.205	26.960
31	29.046	28.856	28.649	28.426	28.185	27.926	27.649
32	29.882	29.668	29.436	29.184	28.912	28.619	28.305
33	30.702	30.463	30.201	29.917	29.611	29.280	28.926
34	31.507	31.237	30.944	30.624	30.279	29.907	29.508
35	32.293	31.991	31.661	31.302	30.913	30.495	30.049
36	33.058	32.720	32.350	31.948	31.512	31.044	30.547
37	33.802	33.424	33.010	32.559	32.072	31.551	30.999
38	34.522	34.099	33.636	33.132	32.590	32.013	31.404
39	35.215	34.743	34.226	33.666	33.066	32.429	31.762
40	35.880	35.354	34.779	34.159	33.496	32.799	32.073
41	36.513	35.929	35.292	34.607	33.881	33.122	32.340
42	37.113	36.465	35.736	35.012	34.221	33.401	32.563
43	37.677	36.961	36.190	35.371	34.516	33.636	32.747

This table (applicable part only reproduced here) is used to determine the number of spindle running hours (total work and walk time per spindle being known) expected from a given assignment of n spindles (or machines). Values falling between those listed here may be interpolated as was the value 27.725 found on Line 6, Figure 3, under an assignment of 30 spindles.

servicing, along with the quantities t, q, and w. The arithmetic values of these three have already been established in the preceding "Cyclic Servicing." It is necessary to refer to Table 1 to obtain the productivity factor A (the number of machine running hours which the average operator is expected to get on average from the n machines—spindles in this case—of his assignment). The results of this investigation are entered in *Figure* 3.

Choosing the Optimum. The better of the two "bests" is clearly cyclic servicing with 39 (n) spindles per operator. This assignment with cyclic servicing actually gives a higher standard efficiency (and therefore more production) than 37 spindles per operator with random servicing.

Calculating the Standards. Having decided on an assignment of 39 spindles and on cyclic servicing, the corresponding standards are calculated as follows:

An allowance (personal) of 15 per cent or 0.15 hour per hour leaves the work fraction of 0.85 hour per hour. Therefore the standard production rate will be 0.85A. For an assignment of 39 spindles, A was found to be 34.68 (from Figure 2). The number of spindle running hours per hour is

$$0.85 \times 34.68 = 29.45$$

With the winding time (including spindle stopping time) being 6.41 minutes per bobbin, the standard quota of bobbins per hour is

$$\frac{29.45 \times 60}{6.41} = 276$$

The cost of operating 39 spindles for an hour (overhead plus operator pay) is

$$1 + 0.04 \times 39 = 2.56 \text{ hours pay}$$

The standard cost per 100 bobbins is

$$\frac{2.56}{276} \times 100 = 0.927 \text{ hours pay.}$$

If wages are stable, this might now be converted to money at the rate. But if wages are subject to frequent adjustment, it is more convenient to keep standards in terms of time.

(The author will supply further information concerning the mathematics involved in this procedure. Questions should be directed to the editors for transmittal to Mr. O'Connor.)

Mill-made lubrication truck cuts labor requirements

by M. D. Rochelle
North Carolina Finishing Co.

Exclusive

■ IS LUBRICATION a problem at your plant? It was a big problem at North Carolina Finishing Co., Salisbury, N. C., for many years. The plant is long and narrow and the two lubrication men spent a large percentage of their time going back and forth to their supply point to obtain the correct grease or oil to do the job.

The lubrication men could carry only one or two greases or oils at a time. Basically, about five or six oils and greases are used, and over-all there are twelve different types of oils and greases.

Recently, a big step was made in solving the problem by the construction of a lubrication truck which provides the oiler with transport for oils, greases, and tools needed in his work. The new truck eliminated almost completely the retracing of footsteps and allows the oiler to perform his work effectively.

Cost of the truck and equipment was less than $500, and it has enabled the plant to reduce the number of oilers from two to one, a good saving with a minimum of effort and expenditure of money.

The truck measures 26 inches by 42 inches, was built by machine shop personnel, and is easily pushed and navigated in small aisles. The frame is of steel with a plywood platform. Front and rear wheels are swivel mounted, and the pneumatic tires are an aid to easy pushing. Brakes lock the wheels when the truck is not being moved. There are two electric powered high pressure lubricators mounted on the truck.

Each lubricator has a spring-return hose reel carrying 40 ft of hose. A spring-return electric reel with 50 ft of cord powers two grease guns. This enables the oiler to use either grease gun from the same plug-in. A common ground for the complete unit provides a safety feature that is needed while oiling and greasing around 550-volt current.

A shelf is provided for storing cans of the various oils, and special racks and brackets are provided for hand grease guns, oil cans, and funnels. A tool box complete with lock is located over the shelf. Yes, there is even a small desk where the oiler keeps his work order pad and pencil!

MAGOG STANDARDIZES PRINTING

Now the printing speed for any fabric is determined in a few simple steps.

by Marcel Ouellette
Standards Department
Magog Print Works
Dominion Textile Co.

Exclusive

*Part 3**

Old Method Time Consuming. With the various factors that affect printing production now explained, the methods used for computing actual printing production standards can be examined. Each pattern will be dealt with separately, showing the old and new methods of computation.

For the sake of clarity, however, some explanation of the code letters appearing on the Printer's Tickets, to which reference will be made, is required. The letter appearing after the pattern number is merely a code letter denoting the predominant color in the combination. Some of the code letters used are:

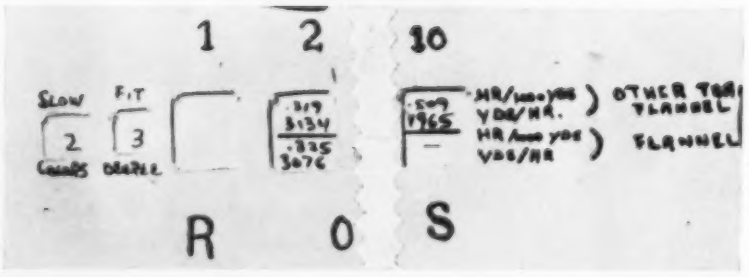
S—gray
C—blue
R—red
K—rust
G—green

The expression "way" which is used in connection with the code letter refers to a color combination. For example, in Printer's Ticket No. 1 there are four ways or color combinations: The way C indicates that blue is the predominant color; the way J indicates that pink is predominant; the way K that rust is predominant; and the way G that green is predominant.

New Method. One Printing Standard Calculator, as mentioned previously, is needed for each group of machines *(Table 1)* when there is no coverage allowance, and one Calculator for each fabric group *(Table 4)* when there is to be allowance for coverage.

A different Printing Standard Calculator was used for each of the five patterns illustrated and discussed in this article.

Printing Standard Calculator,



A series of Printing Standard Calculators, one of which is illustrated here, were developed at Magog Print Works to afford a more rapid means of determining printing production standards for any given pattern. Reproduced below the calculator is a close-up of the window area at the left of the chart's center (directly opposite the words "Slide Chart No. 1"). How the calculator is used is explained here.

*Part 1 of this article appeared in the January, 1959, issue, pp. 56-58; Part 2, February issue, pp. 129-130. This is the final installment.

Slide Chart No. 1 (see illustration), was used in calculating the printing standard for Fabric Example 1, as follows:

Ways C-J-G

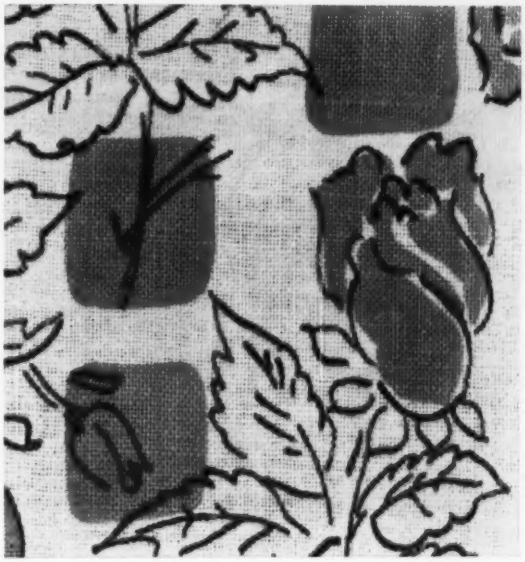
Set the chart so as to get the figure "1" in the window for "slow color." Then get the figure "1" in the window for "degree of fit." Finally, in the window below "2 rollers" for "cloth other than flannel," we find 0.290 hr/1000 yd and below this, 3448 yd/hr.

Way K

Reset the chart so as to have the figure "2" in the "slow color" window and the figure "1" in the "degree of fit" window. Then, in the

Determining Production Standards — Example 1

This pattern is to be run on machine No. 11. Since there are only two colors, it could also be run on any other machine of that group. There is to be no allowance for coverage, so the maximum machine speed of 0.255 hr per 1,000 yd (*Table 1*) is taken. Moreover, the ways or combinations C-J-G have one slow color (PD Black) each, while the way K has two slow colors (PD Black and PD Brown). The degree of fit is No. 1.



Ways C-J-G	
1. Maximum machine speed (Table 1)	0.255 hr/1000 yd
2. Slow color allowance (one slow color)	0.014
3. Fit allowance (Table 2), fit No. 1, two rollers	—
4. Run slow factor (100% of 0.014)	0.014
5. Standard delays	0.010
6. Roller delays (Table 3)	0.011
TOTAL (of 1, 4, 5, and 6)	0.290 hr/1000 yd
or	3448 yd/hr

Way K	
1. Maximum machine speed	0.255 hr/1000 yd
2. Slow color allowance (two slow colors)	0.028
3. Fit allowance, fit No. 1, two rollers	—
4. Run slow factor (100% of 0.028)	0.028
5. Standard delays	0.010
6. Roller delays	0.011
TOTAL (of 1, 4, 5, and 6)	0.304 hr/1000 yd
or	3289 yd/hr

DOMINION TEXTILE COMPANY LIMITED
MAGOG PRINT WORKS

Style _____ Firm _____

Finish No. _____ Order No. _____ Lot No. _____

Design No. _____ Dely: _____ Date _____

Pattern	Pre-pare	Style Cloth	Yards	①	②		
3704-C		60 x 60	3,700	AD BL 2G 3/1 GRN G 16W	PD BLK II	AF AGE (ACID AGEING)	
BLUE		6.4 YDS/LB			48/1 SOLVENT		
3704-S		38" WIDE	3,300	AD RED B 3/1 VIO 16W	"	"	
PINK							
3704-K			2,800	PD BR IPT 4/1 Sc 4/1 YL 2W	"	"	
RUST							
3704-G			2,800	AD GREEN G 3/1 YL 12W	"	"	
GREEN							
Grey Room							
White Room							
Dye House							
Finished							

NOTE
THE LETTERS AD PRECEDING COLORS ON THIS AND OTHER PRINTER'S TICKETS ARE CODE LETTERS FOR "PIGMENT" COLORS OF THE WATER-IN-OIL EMULSION TYPE.

Printed by _____ Date Printed _____

Date Dyed _____ Machine No. 11 Fit No. 1

window below "2 rollers" for "cloth other than flannel," we find 0.304 hr/1000 yd and 3289 yd/hr.

Conclusion. Obviously, there are other allowances to be given the printer during machine running time. These are as follows:

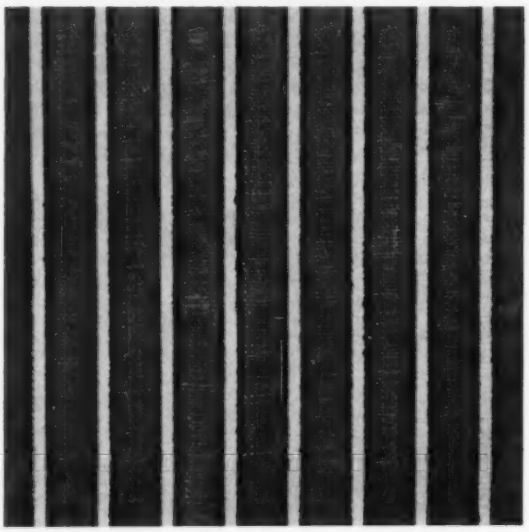
Grey delays
Scraping out boxes
Stick to grey
Slash pattern

Allowances are also given the printer for various reasons during the standard downtime as follows:

Color rollers out
Color rollers in
Change pattern

Determining Production Standards — Example 2

This pattern has two colors and is scheduled for machine No. 4. Degree of fit is No. 2. The combinations S-C have one slow color each (PD Black). The combination R has no slow color. This pattern could also be run on machine No. 3 or No. 5.



Ways S-C

1. Maximum machine speed	0.197 hr/1000 yd
2. Slow color allowance (one slow color)	0.014
3. Fit allowance, fit No. 2, two rollers	0.010
4. Run slow factor (100% of 0.024)	0.024
5. Standard delays	0.010
6. Roller delays	0.011
TOTAL (of 1, 4, 5, and 6)	0.242 hr/1000 yd
or	4132 yd/hr

Way R

1. Maximum machine speed	0.197 hr/1000 yd
2. Slow color allowance	—
3. Fit allowance, fit No. 2, two rollers	0.010
4. Run slow factor (100% of 0.010)	0.010
5. Standard delays	0.010
6. Roller delays	0.011
TOTAL (of 1, 4, 5, and 6)	0.260hr/1000 yd
or	4386 yd/hr

DOMINION TEXTILE COMPANY LIMITED
MAGOG PRINT WORKS

Style _____ Firm _____
Finish No. _____ Order No. _____ Lot No. _____
Design No. _____ Dely: _____ Date _____

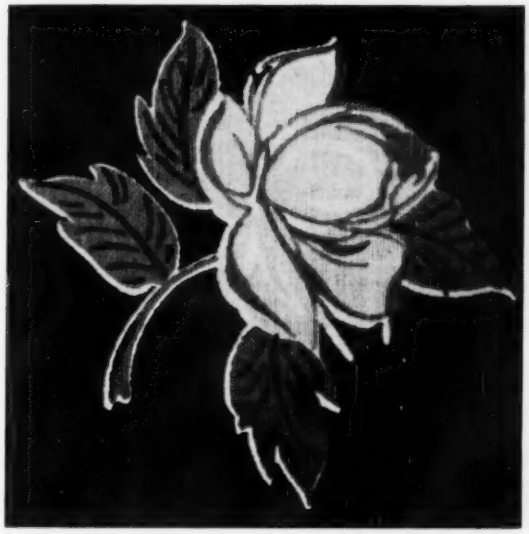
Pattern	Pre-pare	Style Cloth	Yards	①	②		
3773-S		70×80	2,500	AD GREY 12W	PD BLACK II	AF A&A (ACID ADDING)	
GREY		4.00			48/1 SOLVENT		
3773-C		39"W	2,500	AD BL 2G 12W	"	" "	
BLUE JAY							
3773-R			2,500	F SCAR RC 3/1 G-GH/1 HAC	10 oz F BLACK ANS	" "	
RED					24/1 HAC		
Grey Room							
White Room							
Dye House							
Finished							

Printed by _____ Date Printed _____
Date Dyed _____ Machine No. 4 FIT Nº 2

In lint doctor
In lint and roller
In lint, roller, and weeper
Out lint doctor
Out lint and roller
Out lint, roller, and weeper
Wash lint doctor
Wash lint roller
Wash lint roller, weeper, etc.
Patches
All of the above have standard time allowances which the printer

Determining Production Standards — Example 3

The sample shows that we are dealing with a blotch pattern. The way E has three slow colors (Cal Red, PD Black, AP Black). The way H has two slow colors (PD Violet, PD Black). This sample is scheduled for machine No. 16 (Drying Factor 1.25). Degree of fit is No. 3. This fabric is 4.55 yards per lb, therefore in the category of light broadcloths. In this case we allow 70% coverage for the blotch.



Way E

1. Maximum machine speed	0.301 hr/1000 yd
2. Slow color allowance (three slow colors)	0.042
3. Fit allowance, fit No. 3, five rollers	0.035
4. Run slow factor (90% of 0.077)	0.069
5. Standard delays	0.010
6. Roller delays	0.045
TOTAL (of 1, 4, 5, and 6)	0.425 hr/1000 yd
or	2350 yd/hr

Way H

1. Maximum machine speed	0.301 hr/1000 yd
2. Slow color allowance (two slow colors)	0.028
3. Fit allowance, fit No. 3, five rollers	0.035
4. Run slow factor (90% of 0.063)	0.057
5. Standard delays	0.010
6. Roller delays	0.045
TOTAL (of 1, 4, 5, and 6)	0.413 hr/1000 yd
or	2418 yd/hr

DOMINION TEXTILE COMPANY LIMITED
MAGOG PRINT WORKS

Style _____ Firm _____
Finish No. _____ Order No. _____ Lot No. _____
Design No. _____ Dely: _____ Date _____

Pattern	Prepare	Style Cloth	Yards	①	②	③	④	⑤ BLOTCH		
3752-E			2,300	PD RED 3/1 SCFS	AD RED B 3/1 ORN 32W	PD BLK II	AD GRN G 1 1/2/1	AP BLK 9/1 W	AF AGE	(ACID AGEING)
BLACK GRD/BLUE HDS						48/1 SOLVENT	AD YL 4W 1/1 HYCAR	48/1 SOLVENT	"	"
3752-H			2,300	PD VIOL 3/1 BLUE 2W	AD RED VIOL 3/1 AD BL 2G 32W	"	AD YL 3/1 GRN 2K 3/1 BRO 2K 4W 1/1 HYCAR	AB RED VIOL 3/1 CHAD BL 2G 240W	"	"
LILAC GRD/MAUVE HDS		72 x 64 4.6 39"								
Grey Room										
White Room										
Dye House										
Finished										

Printed by _____ Date Printed _____
Date Dyed _____ Machine No. 16 FIT No. 3

records on a Production Report as they occur. These entries are actually claims, for which he is compensated.

Printing in a modern, diversified plant can hardly be regarded as a routine operation. It calls for continual skill and experience on the part of colorists, printers, and management personnel if quality printing is to be achieved on a production basis. Although certain color classes and fabrics present problems, and there are differences in the design and size of

Determining Production Standards — Example 4

This pattern does not require allowance for coverage. It is scheduled for Machine No. 7. Since there are only three colors involved, it could also be printed on Machine No. 15, 16, 17, or 18 (machine maximum speed 0.301). Degree of fit is No. 4. The ways C-D have two slow colors (PD YL and PD Black). The way L has one slow color (PD Black).

Ways C-D

1. Machine maximum speed	0.301 hr/1000 yd
2. Slow color allowance (two slow colors)	0.028
3. Fit allowance, fit No. 4, three rollers	0.025
4. Run slow factor (90% of 0.053)	0.048
5. Standard delays	0.010
6. Roller delays	0.020
TOTAL (of 1, 4, 5, and 6)	0.379 hr/1000 yd
or	2638 yd/hr

Way L

1. Machine maximum speed	0.301 hr/1000 yd
2. Slow color allowance (one slow color)	0.014
3. Fit allowance, fit No. 4, three rollers	0.025
4. Run slow factor (90% of 0.039)	0.035
5. Standard delays	0.010
6. Roller delays	0.020
TOTAL (of 1, 4, 5, and 6)	0.366 hr/1000 yd
or	2732 yd/hr

DOMINION TEXTILE COMPANY LIMITED
MAGOG PRINT WORKS

Style _____ Firm _____
Finish No. _____ Order No. _____ Lot No. _____
Design No. _____ Dely: _____ Date _____

Pattern	Prepare	Style Cloth	Yards	①	②	③	
3699-C		MS-248	4,400	PD YL G4/1 SC LT	PD BLK II 4/1 W	CHAD BL 1 3/1 RED VIOL 48W	AF AGE
BLUE		5.40			THICK 48/1 SOLVENT	4/1 GREY	
3699-D		60x60	3,000	AD BL 26 9/1 GRN G 12W	"	AD RED B 9/1 ORGE 36W	"
ROSE		38"					
3699-L			2,200	AD Grey 9/1 NAVY 12 W	"	AD YL 13/1 GRN 2K 9/1 BRO	"
Lime Green							
Grey Room							
White Room							
Dye House							
Finished							

Printed by _____ Date Printed _____
Date Dyed _____ Machine No. 7 Fig No 4

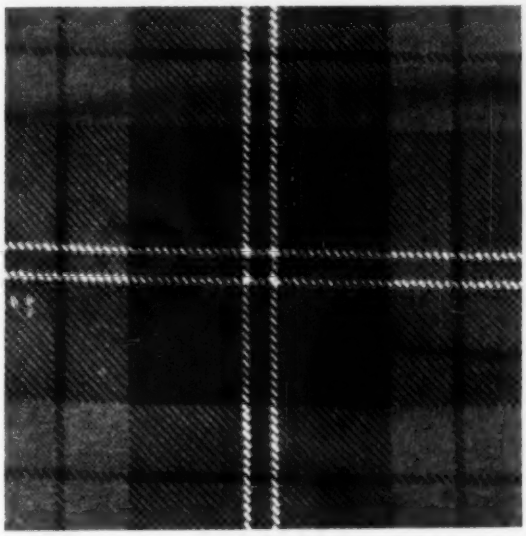
printing machines, these and other factors have been thoroughly analyzed by Magog's industrial engineering staff to enable accurate forecast of printing production for any given pattern.

With the large number of patterns and combinations that are printed at Magog to meet changing styling trends, the Printing Standard Calculators are in frequent use. THE END

Determining Production Standards — Example 5

This pattern is not a blotch, but since the fabric is in the category of flannels, we allow 70% coverage because more color will be absorbed and therefore more time will be required for an adequate drying. This allowance, at the same time, will take care of the difficulty of getting clean-cut diagonal fine stripes should a No. 5 Degree of Fit allowance not be sufficient to cover this difficulty. It is a two-color pattern scheduled for Machine No. 12 (Drying Factor 1.25); therefore, it could be printed on all machines except No. 18.

If we should not allow any coverage here, the basic maximum machine speed would be only 0.255 hr/1000 yd, but with 70% coverage the basic machine drying speed is 0.377 hr/1000 yd. This difference of 0.122 hr/1000 yd will help to achieve a better drying. The color combination involved here has only one slow color (AP Black).



Way G

1.	Machine basic drying speed	0.377 hr/1000 yd
2.	Slow color allowance (one slow color)	0.014
3.	Slow fit allowance, fit No. 5, two rollers	0.025
4.	Run slow factor (70% of 0.039)	0.027
5.	Standard delays	0.010
6.	Roller delays	0.017
	TOTAL (of 1, 4, 5, and 6)	0.431 hr/1000 yd
	or	2320 yd/hr

Form 900-A Dominion Textile Co. Limited

DOMINION TEXTILE COMPANY LIMITED
MAGOG PRINT WORKS

Style _____ Firm _____

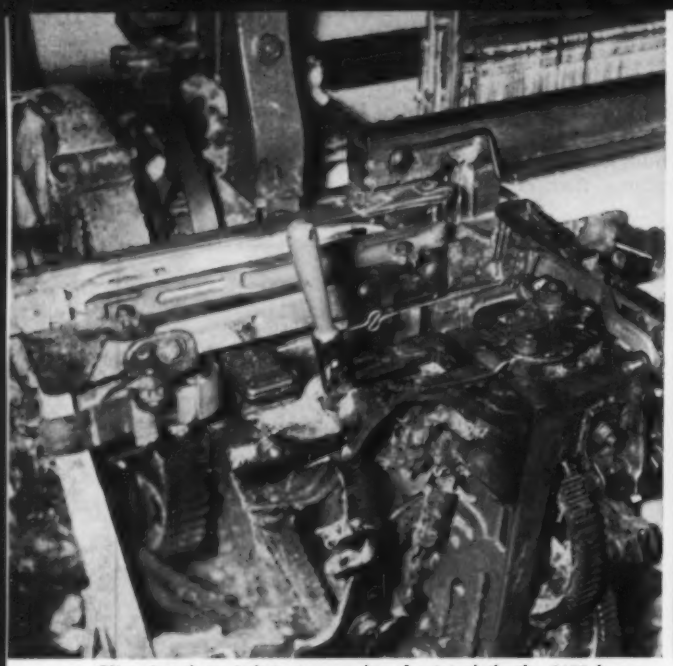
Finish No. _____ Order No. _____ Lot No. _____

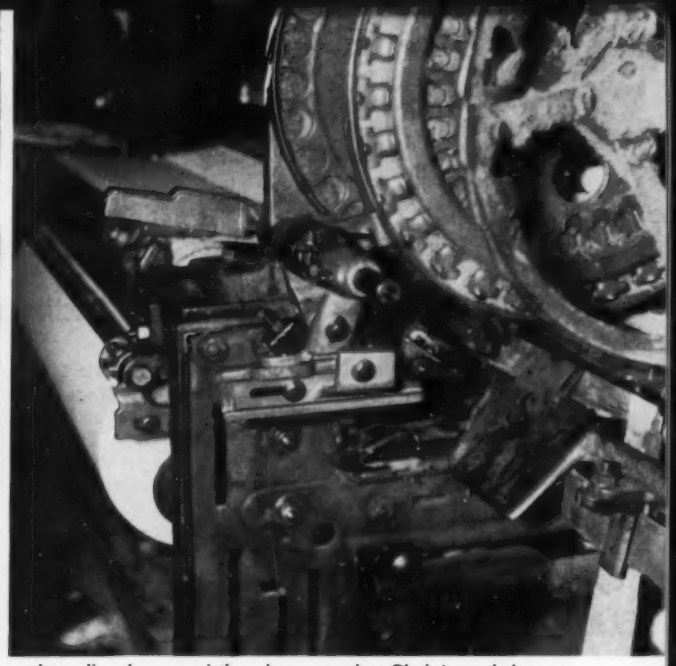
Design No. _____ Dely: _____ Date _____

Pattern	Prepare	Style Cloth	Yards	①	②		
1666-G		42x44	6000	V. BLK 4/1 CB BL 32W	AP BLK 4/1 W	ON GREEN	SP AGE
		3.0		ALL GUM 32/1 ANTH			(STEAM AGEING)
		4.1"					
		FLANNEL					
Grey Room							
White Room							
Dye House							
Finished							

Printed by _____ Date Printed _____

Date Dyed _____ Machine No. 12 Fit No. 5





Climaxing the switch to top grades of print cloth, the 2600 looms were fitted with filling feelers and thread cutters. One fixer installed them all and averaged three looms per day. Cloth is graded on new standard.

Staff prepared Exclusive

2600 filling feelers and cutters

installed on Model E looms marks completion of Woodside Mills' program to upgrade its Greenville plant production

WOODSIDE Mills, Greenville, S. C., has completed a conversion program designed to support present-day demands for higher quality in print cloths. The program consumed the better part of two years.

The firm started by upgrading the quality of cotton used. New opening room equipment was installed, and another picker was added to permit slowing picker speeds. Sixty cards were added, and new drawing and roving frames were installed. Pneumafil was added to all spinning frames.

With opening, carding, and spinning modernized to give maximum quality, the next step was to go to feeler-made goods on the looms. In the past, about two-thirds of the cotton cloth was printed.

Markets now have changed so that demand is greater for plain shades and colors of cloth, and this requires feeler-made fabrics. Competition in the markets calls for feeler-made goods, and the mill now produces cloth for unrestricted end uses.

The company has equipped 2600 E Model looms with Midget feeler motions to effect an improvement in cloth quality. This simple improvement, assuring transfer of a fresh bobbin of yarn into the shuttle before the supply is completely exhausted from the bobbin, prevents inserting a broken pick on every filling change.

Now, 80 x 80 printcloth made in this mill falls into the unrestricted category which includes premium goods. Cloth grading standards have been raised because of the new category the cloth falls in, assuring upgrading of the fabric to premium levels.

Midget feelers and Stafford thread cutters were installed simultaneously as an investment in quality only, and they are not calculated to bring a tangible return.

One fixer installed about three feeler motions and Stafford thread cutters each day until the job was completed. With one loom fixer installing the equipment, only one loom was out of production at any time.

Forty-inch looms in four weave rooms were modified to include the improvements — the job required about one year to complete. Better loom fixing is required now, and employee job security is in a more favorable position as a result of the improvement.

Train employees systematically

by Maley Chagro—Exclusive

CYNICISM is a counterpart of disbelief, and any new idea that is promulgated almost invariably runs the gauntlet of critical cynicism by those who do not like changes—any changes. The oft-repeated expression of these cynics follows a well-worn pattern: "The old method is good enough, so why waste time, effort and needless energy on a so-called new fad?"

However, job instruction training was never really a new fad. It merely remained nearly dormant until a World War gave it new impetus to sell its appeal to common sense.

Actually, many of our greatest industrial leaders of all time quitely built their company's strength and position in the industrial world by the application of the very principles laid down in the job instruction training plan. Training is a must today if we are to train learners well and retain them, which, too is of vital importance!

Training workers today is more complex than ever. We are not dealing with the old "immigrant" type of persons seeking employment, but with a highly intelligent—usually well-educated—and spirited group that have grown up in a democracy that has given them more "protective rights" in industry than their parents or grandparents ever knew.

We in the textile industry must discount the theory that such methods are only applicable to mass production assembly lines. True, it may appear easier to apply these methods to the assembly lines because the worker may have only one repetitive task to perform, day in and day out. But the very fact that they can be applied to one task indicates quite clearly that they can be applied to every task, whether they are in the automobile industry or the textile industry.

A Review of Methods. Reviewing some of the "older methods" of training workers, we sometimes pause and wonder just how industry progressed. But industry did—through sheer genius of ability, genius of leadership, American research and invention. But the average American worker was still a vassal of an age-old tradition, the long-drawn-out apprenticeship that was standard procedure in too many of our industries.

A great amount of our leadership was of the "boss" type that scorned new methods. Apprenticeship under this type of leadership meant that the apprentice would begin at tasks other than the one he aspired to, occasionally requiring years for the learner to achieve his goal. If an apprentice were starting out to learn to be a tinsmith, for example, he usually started out by sweeping the floor and learned details of his future job mainly by observation.

If the apprenticeship were for three or four years he swept the floor for six or more months, and at the end of that period only one of two things were proven: he was either a good or bad floorsweeper. He definitely was no tinsmith!

Today we can thank the presence of the job instruction training plan as the best answer to the growing hunger—and clamor—of prospective workers seeking "specialty" training that will not cost them a lifetime to achieve. If anything, the plan illumines the path to better and more understanding leadership, and eliminates the "holier-than-thou" boss of an era best forgotten.

Training in Hands of Supervision. The success of the job instruction training plan lies wholly in the hands of line supervision as known in the textile industry—regardless of any fine selling and screening job by the personnel department. This success, or failure, can receive its initial stimulus at the very first interview between the supervisor and the applicant.

It is therefore highly obvious that *every* supervisor must first master the principles and methods as laid down in the job instruction training course. To illustrate why it is vitally necessary that *all* supervisors are *thoroughly grounded* in better methods, the following incident (which occurred during a spinner-training program under the job instruction training plan) clearly reveals how it is possible to lose exceptional trainees through poor supervision—supervision that was a "hold-over" from the old school method of selecting senior section hands and promoting them to second hands as a reward for long service:

In one spinning department, all initial training was accomplished on the first shift. Thus a spinner-trainee for the second shift would be trained to handle one frame efficiently on the first shift and then transferred to the second shift where the trainee would continue to run one frame for a given period and thence on to a full task according to schedule.

One trainee, who a short time previously had been transferred to the second shift and graded as exceptional, came into the overseer's office one morning and announced that he was quitting. When queried as to why he was quitting he replied that his supervisor had stopped his frame the previous night and told him to sweep the floor because a sweeper-cleaner had not showed up, despite previous arrangements made for such contingencies.

The overseer realized that this was one of the best ways of losing trainees and upsetting the whole training schedule. Assuring the trainee that such would not happen again, the trainee consented to return and did at the beginning of the second shift. The supervisor in question had received instruction in the job

HOW TO GET READY TO INSTRUCT THE TRAINEE OF TODAY

Have a Timetable—how much skill you expect him to have and how soon.

Break Down the Job—list principle steps, pick out key points.

Have Everything Ready—the right equipment, materials, and supplies.

Have the Work Place Properly Arranged— just as the worker will be expected to keep it.

instruction training plan and obviously he didn't thoroughly absorb the instructions—probably he secretly resented them.

The overseer knew he had inherited a supervisor who may have been a good section hand at one time, but who definitely lacked the type of leadership required in modern and progressive supervision, and had been quietly seeking to replace him. The incident that occurred hastened the supervisor's resignation after an investigation, when he himself asked to be relieved and given a non-supervisory job.

Just how many mills in the textile industry have incorporated the job instruction training plan in their training programs can only be surmised. Just how many department heads and other supervisors have never once heard of the method is another guess. But one fact is clear: A whole new generation of supervisors, workers and trainees are now employed since training-within-industry methods received their first great impetus during World War II.

Job instruction training is a cost-saving and time-saving method that will automatically work if the instructor who has previously been taught the method will conscientiously teach and thoroughly explain the four steps that are the "backbone" of the method, whether such instructor is a supervisor or not.

Before reviewing the four steps, one other important factor should be brought out, and that is: the job instruction training plan can also be applied successfully when upgrading an employee. It is a fallacy to train new employees under the job instruction training plan and allow regular workers to try and upgrade themselves by employing methods of their own that may not be highly satisfactory and which may possibly impair quality.

If a supervisor encourages an employee to learn a more skilled job, then it is the supervisor's responsibility to see that the employee learns the newer job under the best methods.

The four steps of the original plan were the brain-children of leading American industrialists who, in conjunction with the government, made the steps available to industry at large.

Step 1. The first step—prepare the worker—contains four important component steps of preparation: (1) put him at ease; (2) find out what he knows about the job; (3) get him interested in learning the job; and (4) place him in correct position for learning.

Every trainee should first be interviewed by the overseer and never turned over to a subordinate for this duty. That first interview is going to make a lasting impression on the trainee and, incidentally, it gives both employer and prospective employee a chance to "size" each other up. How you, Mr. Overseer, prepare him in his first interview will greatly influence his future endeavors in the department.

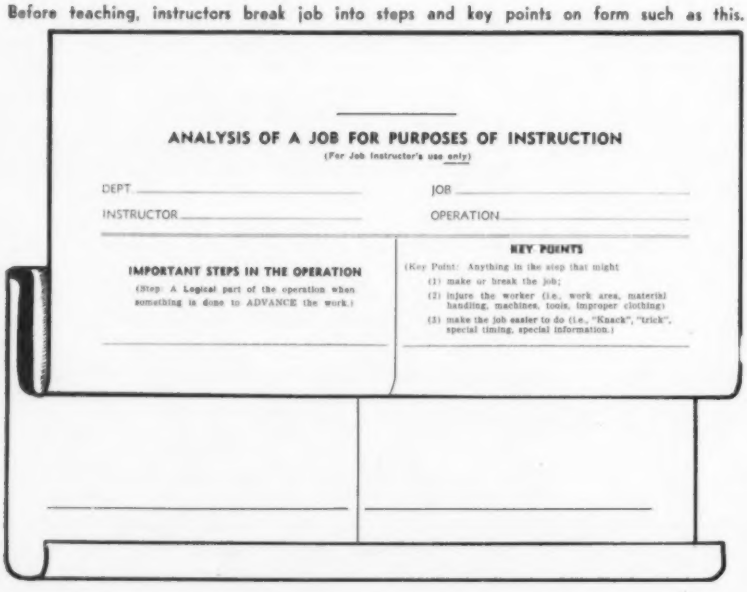
First impressions are difficult to forget, though they are not necessarily "lasting" impressions. Whatever you say or do will instinctively cause him to believe it is company policy. Putting an applicant at ease is first, of course, the overseer's responsibility, and then the supervisor who will be responsible for his training.

It does not mean that undue exuberance should be exhibited, nor is it necessary to fawn all over him. Neither should you allow him to flatter your sense of good judgement. However, a welcoming smile immediately takes the "edge" out of the interview.

After a short, pleasant interview with the overseer, the future worker should immediately be introduced to his supervisor. If it is customary for the line supervisors to be called by their first names, this fact should be made known when putting him at ease.

It is not too difficult to say: "Glad to know you, Bill. My name is John Doe as you know. But just call me Jack; they all do." It is one

Before teaching, instructors break job into steps and key points on form such as this.



ANALYSIS OF A JOB FOR PURPOSES OF INSTRUCTION

(For Job Instructor's use only)

DEPT _____ JOB _____

INSTRUCTOR _____ OPERATION _____

IMPORTANT STEPS IN THE OPERATION	KEY POINTS
(Step: A Logical part of the operation when something is done to ADVANCE the work.)	(Key Point: Anything in the step that might (1) make or break the job; (2) injure the worker (i.e., work area, material handling, machines, tools, improper clothing) (3) make the job easier to do (i.e., "Knack", "trick", special timing, special information.)

of the best ways of "breaking the ground."

Finding out what he knows about the job may seem relatively unimportant at first glance if he is a new trainee (if he does know the job, then he is definitely not a trainee) but some time will have to be spent with him in acquainting him with his duties and the methods in force.

The best psychology a supervisor can employ, in this instance, is to introduce him to few of his coworkers to whom he can go for assistance if needed in his initial start. Untrained and trained workers appreciate this greatly—it prevents their feeling ignored.

The Trainee. To get him interested in the job if he doesn't know, the supervisor, or trained instructor, should point out the important parts of the task, their relationship to the finished product, and also some of the task's history. If the trainee is to be a spinner-learner, point out the evolution of spinning from the spinning wheel, through the spinning mule, to the present high-speed spinning frame. And remember that the trainee is observing the spinning frame as an absolutely strange mechanism.

If his first primary operation is to observe and to piece ends, he is no doubt wondering in his first observations how he is going to stop a bobbin with a broken end that is traveling say approximately 8000 revolutions per minute. How to stop that bobbin without getting a hand burn is *very important.* The final component of step No. 1 is to place the trainee in correct position. By this is meant that he can watch what the instructor is doing, or showing him, without undue body or eye strain and without having to reverse mentally any of the instructors motions.

Step 2. The second major step—Present the Operation—is designed to capture further the immediate interest of the trainee through illustration and explanation, and contains three components: (1) tell, show, and illustrate; (2) stress key points; (3) instruct clearly and completely, taking up one point at a time but no more than learner can master.

Mrs. Mary Doakes
Anytown, U. S. A.

Dear Mrs. Doakes:

Congratulations! You have now completed your course of training and have been assigned a full set of frames. It has been through your attitude, ability, skill, and cooperation that you have gained such an achievement.

It is the wish of management that you continue to develop and to continue to spin the quality yarns that will make our cloth the outstanding product in its field.

It is particularly gratifying to welcome you as a full-fledged spinner where only a short time ago I welcomed you as a learner. Again, keep up the good work, and feel free to drop into my office to discuss any problem any time.

Very truly yours,

Maley Chagro

Maley Chagro
Overseer of Spinning

MC:s

Upon satisfactory completion of the course, each trainee is sent a letter like this.

The trainee may have enjoyed hearing the instructions, but his memory can grasp only so much. He has to be *shown* more and the task illustrated. And while this is being done, "key points" have to be stressed. Neglecting to stress this important feature will never make the trainee a first-class workman.

A "key point" is any little trick-of-the-trade that will help the trainee master the job quickly—the most important one is safety. Safety hazards cannot be over-emphased, but *the instructor should not make the trainee afraid of the job!* Simple rules strictly adhered to are ordinarily effective.

Instructing the trainee is a task that calls for ingenuity and patience. Though we must bear in mind that we want the trainee to produce and produce quickly, we must constantly remember that he does not know the job, therefore he cannot be held responsible until he has been thoroughly taught.

Instructions should be clear and complete, starting at the beginning of the task, and stressing only one point at a time. The trainee must know that "one point" before he is shown another. As he is instructed, the trainee should be repeatedly questioned to determine if he understands. If he doesn't, the instructor should patiently review that "one point" until the trainee knows it. Very few of us can understand a job by listening to somebody talk about it. By illustrating the job, the instructor is letting the trainee know that *he* knows the job, and the instructor's task is made easier when he knows the trainee has confidence in his ability.

Step No. 3. In the third step—Try-out Performance—the trainee tells and shows the instructor what he has learned, and explains key points. At this point the instructor should ask questions again and continue to correct errors until he is sure the trainee thoroughly knows that particular task.

The trainee will at first no doubt blunder a few times, but he is now doing something with his hands, and hands and memory will synchronize when he is actually doing the work, if he has been correctly taught. Try-out performance is also trying on the instructor. The instructor should never lose his tem-

per, or a potentially good worker is also lost. Once the instructor is sure the trainee knows the task, have him repeat it once more.

Step No. 4. The final step—Follow up—is a logical conclusion to the job instruction training plan. The trainee is now a "rough diamond," and all he needs is "polish." The supervisor, or instructor, should personally follow up the trainee after he is assigned to his task. He should be encouraged to look for more key points, strive for high production and quality.

The trainee is now on his own with his assigned task, and his follow up should also include extra coaching. Never discipline a trainee for something that he does not know and was not taught.

Never betray a personal confidence except to seek more advice and then with the trainee's permission. Line supervision today should always remember that the trainee of today is the technician of tomorrow, and he is the one that holds the key to two jobs—his own and yours.

You have a stake in his future. Train him under the best methods. The old adage, "If the worker hasn't learned, the instructor hasn't taught" still holds true. The job instruction training plan is a four-step method that is seven leagues ahead of any other!

Corrections in U. S. wool fabric tariff-rate quota urged

■ THE NATIONAL Association of Wool Manufacturers is urging the Government to make several corrections in the U. S. wool fabric tariff-rate quota for 1959 and also urges a "meaningful" quota on imports of wool textiles and apparel from Japan.

NAWM's views were stated in a letter from William I. Kent, president, to the U. S. Committee for Reciprocity Information—one of the agencies developing recommendations for President Eisenhower on the 1959 tariff-rate quota on imported cloth under the Geneva Reservation, a part of the General Agreement on Tariffs & Trade (GATT).

Mr. Kent said the Reservation is helping hard-pressed U. S. mills and that NAWM is gratified the Government has reached the tentative conclusion to continue the tariff-rate quota in 1959 along the 1958 lines.

Besides its own proposals, NAWM urged consideration of suggestions from the Clothing Manufacturers Association of the U.S.A. and the British National Wool Textile Export Corp. CMA seeks special treatment of certain high priced imported men's wear fabrics. The British seek allocation of the low-duty portion of the tariff-rate quota on a country-by-country basis.

Mr. Kent, also president of Kent Manufacturing Co., Clifton Heights, Pa., said these two plans, in conjunction with NAWM's proposals, might help the Government find a more permanent solution to the wool textile import problem. He noted that President Eisenhower last year asked his Trade Policy Committee to study alternate methods of applying wool cloth duties but so far no solution had been found.

The corrections sought by NAWM concern make-up of the U.S. cloth production base. The larger this base the greater the amount of imports allowed to enter at the lowest rate of duty, 25% of value. This is because imports equal to 5% of U. S. cloth output averaged over the three prior years entered at 25%. When this 5% point is passed (14,200,000 pounds in 1958) the duty rises to 45% on most goods until the year end when the rate reverts to 25%. The same procedure is followed each year.

Mr. Kent said "we find no basis whatsoever" in the Reservation "or in equity for inclusion" in the U. S. base of goods which, when imported, do not enter under the tariff paragraphs specified in the Reservation. On the same basis, he said U. S. production of goods containing 25 to 49.9% wool should be excluded. These, he said, were mainly blends of 55% Dacron fiber and 45% wool. If imported, he said, such cloth would be in chief value of polyester fiber and would not enter under the specified paragraphs. Mr. Kent also urged exclusion from the U. S. base of goods made for the Government, mainly military fabrics, noting the Government does not import such cloth.

Mr. Kent said inclusion of U. S. output of blankets and blanketing in the domestic base boosted by nearly 800,000 pounds the amount of imports entering at the cut-rate duty of 25% in 1958. Inclusion of 25 to 49.9% wool goods boosted low-duty entries by more than 700,000 pounds. This is a total of some 1,500,000 pounds, or about 10% of the low-duty portion of the tariff-rate quota.

Noting that the Government repeatedly had said fabric categories were not possible under the Geneva Reservation, Mr. Kent urged reconsideration. He said categories could be set up on a fabric weight basis so that the duty would rise to 45% as imports in each category exceeded the 5% break-point.

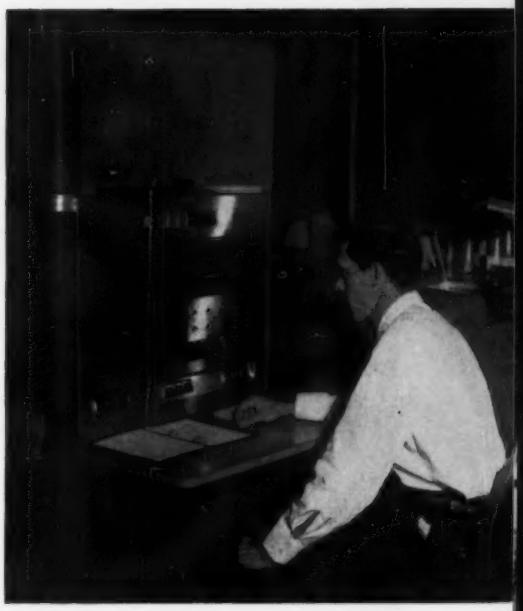
Allocation of the low-duty part of the tariff-rate quota, Mr. Kent said, would "not only serve to restore the relative positions of other foreign suppliers. . . against unfair competition from Japan but also could help to extend needed protection" for U. S. mills in respect to imports from Japan. Allocation would be based on imports into the U. S. from each country in some past period. Britain, long the principal supplier of imported wool cloth here, has been losing ground because of soaring imports from Japan, which now is second only to Britain. Other principal suppliers are Italy and France.

Mr. Kent said imports from Japan were particularly devastating and that a "meaningful" quota, voluntary or otherwise, on Japanese cloth, other wool textile items, and wool clothing "is a prerequisite to the 'development of alternatives for application of wool cloth duties' with which the President's Trade Policy Committee has been charged."

He noted that a comprehensive quota on imports from Japan had been recommended last July in a memorandum to the Secretary of Commerce, chairman of the Trade Policy Committee. Mr. Kent wrote that "we use the word meaningful to draw sharp contrast between what still is needed and the 'quota' which Japan unilaterally imposed recently on exports of wool fabrics" to the U. S.

The CMA proposal for special treatment for certain imported men's wear fabrics was developed "through broad industry reference," Mr. Kent said, adding that "our position on the CMA proposal is predicated on its acceptance as a whole," including a safeguard for U. S. mills.

"What jobs does our computer handle?"



It's doing 23 jobs, processing a wide variety of data, from seconds in weaving to stockholders' dividends. Many of these Cone Mills' electronic computer applications are important in mill operation, as well as administration.

by James R. Perrin
Manager of Office Administrative Services
Cone Mills Corporation

Exclusive

THREE or four years ago all you had to do to lose the attention of a group of mill operating executives (plant managers, superintendents, and department supervisors) was say "electronic data processing equipment."

Immediately their thoughts turned to the "front office" and how much easier it made the jobs of those "white collar workers." "Maybe those machines do speed the preparation of our payrolls," they would say, "but they don't help us with our job of running the mills."

But ask Cone Mills' plant operating personnel today if those data processing machines are of any use to them, and you will find that their opinion has changed. "Yes," they will declare, "we benefit directly from many of the reports prepared on this equipment."

What reports are useful to men in the plant?

A glance at the accompanying tabulation of some of the jobs we are doing with this equipment—a basic IBM 650 data processing system—will answer this question for you. Note particularly quality control, dye cost analysis, supply reports, labor cost analysis, weaver efficiency reports, accident frequency reports, and standard fabric printing cost.

You didn't know it was possible to mechanize the preparation of so many items?

Actually 23 jobs (described later in this article) are being done on our data processing system, a number of which could not be profitably prepared mechanically until we installed one of those so-called "electronic brains" or computers that we read so much about today in connection with scientific research, market research, etc.

You were under the impression that those computers were for the long-haired mathematicians who deal with rockets, atomic energy, guided missiles, etc.—not textile mills?

Our computer is a medium-size machine—one designed to fill the gap between the large-scale computers used for scientific and commercial applications and the smaller units which have been used in textile mills for some time.

Doesn't the cost of such complicated equipment prohibit its use by textile mills?

That depends on the mill and the extent to which the computer can be utilized.

Cone Mills has realized a considerable saving through the use of the computer. (See the tabulation on the next page for specific examples.)

Then, too, a number of jobs have been mechanized which would not have been profitable without the computer—for example: standard fabric printing costs, fabric sum-

Present Major Computer Applications

1. Preparation of payrolls
2. Quality control
3. Packed stock inventory
4. Dye cost analysis
5. Supply reports
6. Labor cost analysis
7. Weaver efficiency reports
8. Retirement plan reports
9. Accident frequency reports
10. Fabrics cost reports
11. Standard fabric printing cost
12. Stockholders' dividends

Specific Examples of Time Saved by the Computer at Cone Mills Corp.

1. Plant payrolls are prepared in *5 hours instead of 2 days* formerly required with conventional equipment.
2. Cost of 110 fabrics can be determined in *6 hours instead of 3 weeks.*
3. Weekly report of seconds made in denim weaving is now prepared in 4 hours one day a week, *saving 4 hours a day.*
4. Quarterly reports of average hourly earnings of piece rate workers are now prepared in *16 hours instead of 40.*
5. The weekly inventory and order position report is now available on Monday for the previous week. Formerly it was ready approximately one week after closing date.
6. Dividend checks are now prepared in *1 day instead of 2.*

mary costs, and cotton contract reports.

Finally, installation of the computer saved considerable expansion of both existing punched card equipment and personnel to operate the machines. In fact, it is estimated that the cost of additional equipment and personnel required to do the jobs now being done would amount to one-half the monthly rental of the computer.

How did we determine that a computer would be economical for us?

In 1955, two members of our Systems and Procedures Department attended a seminar to study the computers available. Upon return of these men to Greensboro, four manufacturers of computers were asked to make an analysis of our payroll procedure (a job considered by us to be typical of those being done or our punched-card equipment) and submit a proposal to us by a certain date.

The proposals were studied by our systems group with representatives of top management. After careful consideration of all factors, including costs, possible savings, maintenance, flexibility, delivery, and systems assistance, our selection was made and contract with the computer builder negotiated.

Next, two of our very intelligent young men with tabulating experience in our company were tested for aptitude and sent to schools conducted by the machine supplier where they learned to program the computer. The computer arrived at Cone Mills Corp. executive offices nine months after actual intensive study was under way by these men; and in less than 24 hours after arrival of the machine, payrolls were being prepared.

How does the computer work?

The computer, which was installed in 1956, works on the stored program principle and checks the accuracy of its own work—that is, it solves a problem or processes data by following instructions previously stored in memory on a magnetic drum. At the start of each procedure, the program is read into memory from cards and remains stored for use with each record processed.

The magnetic drum, which remembers the programs and operations data fed into the machine, is the electronic heart of the computer. An alloy-coated, steel cylinder only 16 inches long and four inches in diameter, the drum whirls at 12,500 revolutions per minute and provides up to 20,000 memory positions on its outside surface for storing data in the form of magnetized spots. Information stored on the surface of the drum is available for calculation in less than three one-thousandths of a second.

What are the 23 jobs the computer is doing?

Following is a brief description of the jobs now being processed on our computer installation:

1. Plant Payroll. Eleven Cone Mills' plants furnish the Tabulating Department with payroll work sheets showing identification and job production for each employee. Tabulating cards are punched from these sheets for processing payroll and cost reports.

In one run through the computer these cards are processed to determine each employee's regular earnings, overtime pay, shift differential, withholding tax; F.I.C.A., and net pay. Additional cards are automatically prepared and used to prepare checks, check registers, and new year-to-date and cost information.

Initially, payroll was done at the local plants semi-automatically, centralized on conventional punch cards. By using the computer, considerable card handling is eliminated. Only nine punched card machine steps are required as compared to 17 steps with the conventional system. Training of new personnel is easier, and additional payrolls could be prepared without a proportional increase in machines or operators.

2. Quality Control. Specially designed cards are mark-sensed at the White Oak Plant (denim mill in Greensboro) and at the Salisbury plant for each cut of cloth as it is inspected. Each of these cards shows loom number, set number, style code, quality code, and cause of seconds (if any).

These cards are processed daily through the mark sense reproducer, accumulated for the week, and processed through the computer which prepares summary cards showing the total number of first quality and irregular cuts of cloth by weaver's set and by style. The defects of the irregular cuts are accumulated by style for each type of defect, and a percentage of seconds is shown on the weekly report.

Initially done manually, this was a voluminous and lengthy punched card job, requiring daily summarization. The computer saved four hours a day; reports are now processed in about four hours one day a week.

3. Cotton Storage Records. The Cotton Department sends the Tabulating Department cards representing each bale of cotton to be shipped from storage. The cards are processed through the computer where weight is multiplied by the average price, and a total dollar amount for each shipping order is furnished the Cotton Department.

This job was transferred to punched cards from a manual system one year prior to the computer installation. Major advantage of the computer is speed in processing.

4. Absentee Records. From the plant payroll sheets cards are punched each week reflecting the employee absences by reasons. These cards are accumulated for the quarter, and the computer is used to summarize them, showing for each employee the number of days absent for each reason and total days absent.

Initially done by the employment office, this job was early recognized as an ideal application for punched card accounting. More complete records could be kept. The computer reduced time required to prepare this report from one-half week a quarter to one day a quarter.

5. Weaver's Efficiency Reports. The mills furnish information weekly showing per cent of seconds and per cent of efficiency for each weaver. These cards are processed quarterly to show an average per cent of seconds and an average per cent of efficiency for each weaver.

Previously, preparation of this report was a manual operation. Much time is saved by the computer's ability to summarize.

6. Sales Analysis. Cards representing orders are calculated to show total dollar amounts of orders.

Plans for the future include con-

The computer at Cone Mills Corp. effected a reduction in plant payroll processing time from two days on conventional equipment to five hours. Pictured here are three steps in the IBM 650 computer system operation. TOP PHOTO—From payroll work sheets cards are punched to show the current payroll figures into the payroll detail card. CENTER PHOTO—Payroll detail cards are processed through the computer and a current earnings card is punched. BOTTOM PHOTO—Current earnings cards and year-to-date cards are processed through an accounting machine which writes paychecks.

siderable expansion of the contents of this report.

7. General Supplies Inventory. Cards are mark-sensed in the supply rooms at several plants to show quantity, unit price, and number of items used during each quarter. Cards are calculated to show dollar value of inventory and value of items used.

Previously done manually, this operation was mechanized due to the large volume. The computer affords a faster closing. Purchase analysis and usage analysis are principal advantages of mechanizing this job.

8. Stockholder Dividends. Certificate cards for each stockholder are summarized showing number of shares and the amount of the dividend. These cards are collated with master name and address files to be used in printing dividend checks and a check register.

This summarizing job was mechanized due to volume. The computer provided a reduction from two days to one day in processing time. Better control and accuracy are very important advantages in this application.

9. Packed Stock Inventory. Card files representing the inventory in detail and in summary form are maintained in the Tabulating Department. At the end of each week the summary file cards, plus the additions and minus the shipped, are processed through the computer to prepare new summary cards. These summary cards are collated with order cards to prepare the Weekly Inventory and Order Position Report.

Preparation of this report was a manual operation prior to installation of the computer, since it was not considered economical for conventional punched cards. On a manual basis, these records were kept biweekly by hand; summaries were available over a week after closing of each period. Now reports are available on Monday for the previous week. Reports prepared on Monday are received in Cone's New York sales office on Tuesday.

10. Tabulating Machine Job Cost. Time sheets are marked each day to show the number of hours worked on each machine for each job. At the end of the month cards are punched from these sheets and calculated in the computer, using master cost cards to arrive at a machine cost, direct labor cost, and an indirect labor cost for each machine and for each job prepared. These figures are used

Relationship of the Data Processing Center of Cone Mills to Management

■ Cone Mills' data processing center functions as a company-wide service department to the plants and other departments.

The Data Processing Department reports directly to the Treasurer of Cone Mills Corporation, Harold W. Smith.

The "Tabulating Machine Job Cost" procedure outlined in Item 10 is done primarily to distribute the cost of the Data Processing Center to the department or plant for which the work is done.

The Office Administrative Services Division, headed by James R. Perrin, is responsible for co-ordinating company wide systems and procedure activities. This department also reports directly to Mr. Smith. The division analyzes new jobs to determine the feasibility of mechanization and the approach and procedures to be initiated to accomplish them.

The concept of a company-wide service department reporting directly to top management assures proper utilization of data processing equipment in areas which would yield the most advantages to the entire company. This method also provides for a perpetual examination of existing mechanized procedures and existing data in order to combine these with new jobs. This often results in interplant and interdepartmental savings which might not be obtainable under another system.

in conjunction with a standard cost procedure to charge out jobs processed by the Tabulating Department.

Mechanization of this job enables management to economically compile figures which are used to charge out the costs of the Data Processing Center to the various departments for which work has been done.

11. Salary Payroll. Salaried employee files are furnished the Tabulating Department monthly by the Treasurer's Department. These cards are calculated to gross pay. All deductions are withheld, tax is calculated and deducted, while calculating net pay. The resulting cards are used to prepare checks, check registers, and distribution reports.

This job was previously done manually. Punched cards increased speed of processing and enabled the furnishing of more detail and faster distribution of this expense. The computer reduced processing time from two days per month to one day.

12. Fabric Costs. The Cost Department furnishes written sheets showing basic information for each style. Cards are punched from these sheets and are processed through the computer which looks up the correct cost factors in the tables stored on the magnetic drum and calculates the selling price for each style.

This was done manually prior to installation of the computer. It was felt that this job could not be done economically on the conventional punched card accounting equipment. Manually, it took three weeks to calculate and three weeks to check cost application for 110 fabrics. The computer system can do the job in six hours from key punching on, and just two hours are required when only minor changes are involved.

13. General Supplies Consumed. Cards representing parts issued in plant supply rooms are summarized monthly to prepare reports showing costs of supplies issued for each section by shift of the weave room, with totals being summarized for other departments.

The computer's ability to render a more complete summary than that provided by the conventional punched card system previously utilized saves one hour in posting.

14. Cost of Dyes and Chemicals Used. Information on amount of dyes and chemicals used daily is forwarded to Tabulating Department by teletype. This information is calculated to arrive at an actual cost per yard for the various styles and colors processed at the Granite Plant (corduroy mill at Haw River, N. C.). These cards are compared monthly with the standard-cost-per-yard master files.

The main advantage of the computer system over regular punched card equipment is the ability to process multiple card types in one run. It is felt that this faster processing results in greater control and less waste.

15. Converting Sales Analysis. Invoice cards from the Converting Department are calculated to determine invoice amount and discounts, if any.

This high-volume, time-consuming job was a natural for punched cards. Future plans include more detailed summaries and possibly a consolidation with inventory for stock allocation.

16. Average Hourly Rate Reports. Cards representing earnings that are to be subtracted from the labor cost reports are processed through the computer and summarized by task.

Here the machine saves numerous short, time-consuming procedures. A considerable gain of speed was realized through reduced handling.

17. Average Hourly Earnings of Piece Rate Workers. For three weeks out of each quarter the payroll detail earnings cards are processed through the computer. Hours and earnings are summarized by task, rate, and units operated, and an average hourly rate is calculated for each.

This extensive manual job took 40 hours quarterly. The computer does it in 16 hours.

18. Overhead Expense Calculations. Production reported quarterly is multiplied by cost units to arrive at labor, fixed, variable, and manufacturing materials costs.

There is little change from conventional punched card procedure. The computer provides savings in summarizing time and a smoother operation.

19. Standard Textile Printing Cost. Basic information reported by the Cost Department is processed through the computer which looks up the proper cost factors on the tables stored in the machine. The labor, fixed, variable, and overhead costs to print one yard of cloth for the various designs is calculated for printing orders from 1,000 to 50,000 yards.

With the computer it was economical to mechanize this hand operation. Periodic processing is done on request. A more detailed breakdown of printing costs per yard in a wider range of order sizes is obtainable.

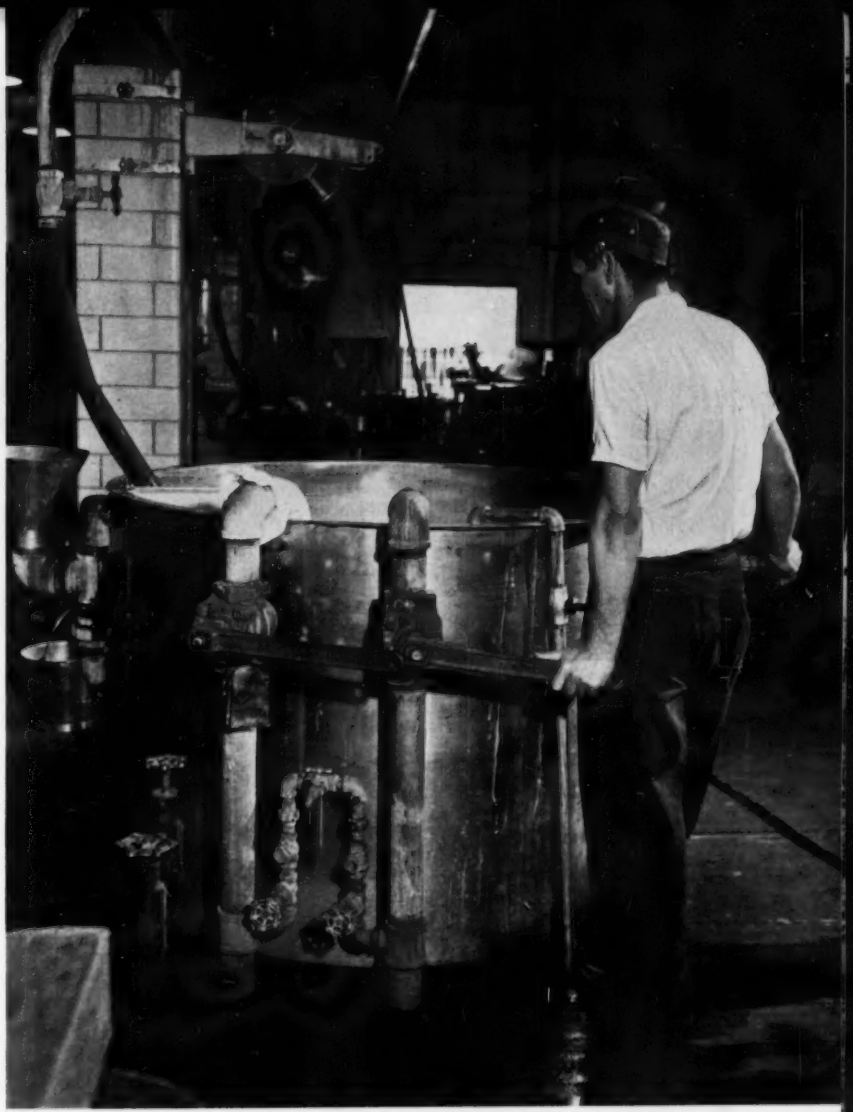
20. Cotton Contracts Reports. Contract cards and invoice cards are processed through the computer to determine which contracts are past due, which are due in the current

(Continued on page 103)

"The darned thing won the office baseball pool."

Lubricated plug valves don't stick on standing for long periods, require only a quarter turn to open and close, and handle a variety of materials.

by Paul A. Manor
Rockwell Mfg. Co.
Exclusive



Useful in process as well as service lines, lubricated plug valves enable textile manufacturers to

standardize valve requirements

TEXTILE PLANT valving, although basically simple, can be a difficult and expensive problem. Valves that are difficult to open and close often require extra manhours, unnecessarily increasing overhead.

In textile mills valves must offer positive shut-off for a great variety of material flowing through process lines (sulfuric acid, caustic soda, calcium hypochlorite, etc.), and leaky valves not only affect the cleanliness of the mill but can also be a serious safety hazard.

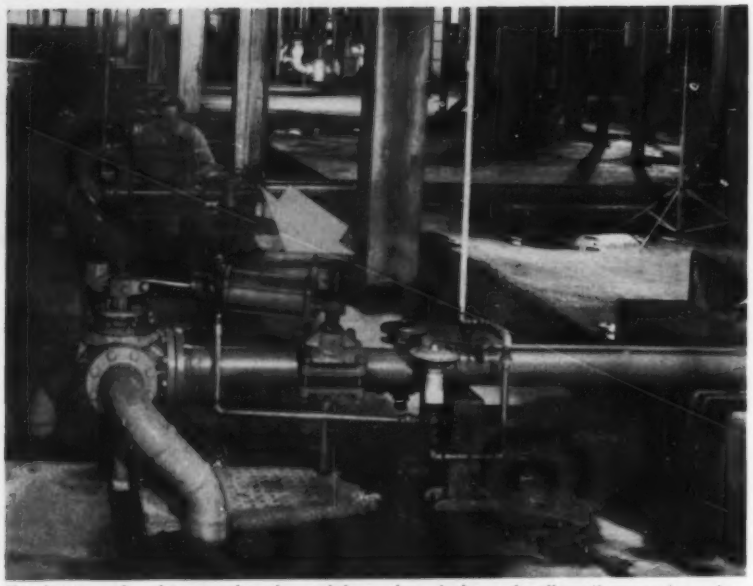
Often valving must be compact and adaptable to manifold piping because of the space limitations in many mills. Because the lubricated plug valve is economically competitive and meets the requirements for both the process and service lines in textile manufacture, it is gaining increased acceptance throughout the industry.

Plug Valve Design. The lubricated plug valve is the "block" or complete shut-off type. It can also be used for throttling where accurate adjustment is not the most important requirement and consists of only three basic parts: (1) body; (2) cover; and (3) plug. The plug is the only moveable member.

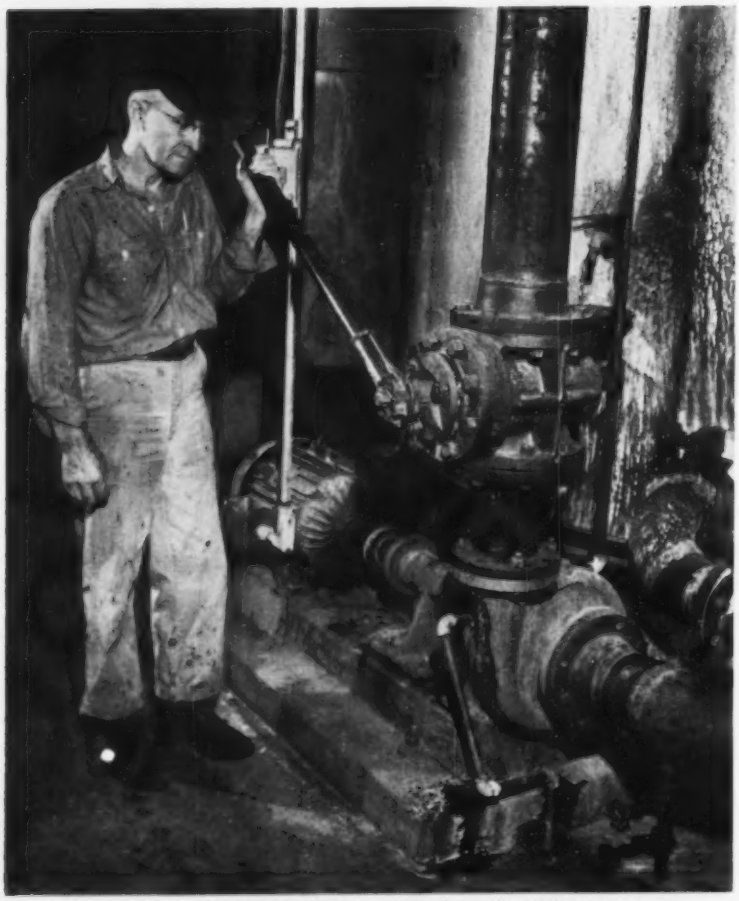
Valves with tapered plugs are generally more acceptable than valves with cylindrical plugs because they shut off better. The plug works by rotation only, eliminating the need for raising and lowering a moveable valve member. This ensures that the seating surfaces will not collect sediment or other foreign material that would interfere with valve action.

A lubricated shoulder type gland-joint is used, rather than conventional stuffing boxes. This compact gland combines the function of stem seal and thrust bearing. The sealing member is a thin, flexible metal diaphragm.

As the valve is turned, the lubricated surface at the top of the plug



This battery of multiport valves located beneath a dyehouse handles all waste from dye machines. Valves are pneumatically operated (arrow in center of photo points to one of the air-powered cylinders), monitored by a thermostat that sends the water, depending on its temperature, to mill water heating system or cold waste stream.



An easy quarter turn of this six-inch valve controls flow of bleach liquor to storage.

slides freely against the metal diaphragm. Leakage is prevented by the lubricated close fit between the two parts and the relatively narrow area of contact through which the plug-sealing thrust is applied.

One of the great advantages of the lubricated plug valve is its quick opening and closing characteristic. A quarter turn fully opens or closes the valve. A stop collar on the valve gives positive indication as to the position for open and close and there is no reliance on "feel," eliminating possible human error.

Pressure Lubrication. Pressure lubrication performs three important functions in the lubricated plug valve: it (1) provides "jacking" action; (2) seals the valve; and (3) reduces friction and wear to a minimum.

The lubricant pressure against the smaller end of the valve plug lifts the plug from the seat. This action overcomes any adhesion and because of the taper, creates a small space for lubricant between the plug and the body.

As a result no matter how long the valve remains closed, the plug can be unseated easily. Not only can a valve be put into action after long disuse, but it can be lubricated at the same time. The lubricant also acts to seal the valve against leakage while the valve is in a closed position.

The usual means of obtaining lubricant pressure is an elongated screw, threaded into the outer end of the plug shank. Because of its small diameter and the use of a fine-pitched thread, the lubricant screw develops ample pressure on the lubricant, yet turns freely. These screws are often provided drilled and fitted with a giant "button-head" fitting for grease-gun lubrication.

Lubricant is distributed around the plug and valve body by means of lubricant grooves, divided between the body and plug. The grooves are so located that when the valve is in the closed position, valve ports are completely sealed. Placement of grooves is such that groove sections exposed during operation are disconnected from the lubricant supply before they are brought in contact with the line-fluid.

The grooves are automatically reconnected when the plug is brought to the fully opened or closed position. Thus the valve can be partly opened or cracked without blowing out the lubricant.

Valves in the Textile Industry. Since lubricated plug valves are able to work over a wide range of temperatures and pressures they can be used in process lines carrying dyes, bleaches, steeping solution, and sulfuric acid, as well as in service lines carrying water, oil and fuel. Textile mills can standardize their valve requirements—cutting costs and making maintenance and inventory easier.

The valves' adaptability to manifolding is another advantage. Lubricated plug valves contain no projecting yoke or bonnets, therefore, they can be closely spaced on manifolds.

They are available in a number of multiport constructions. A single L-shaped passage connects any two ports, a T-shaped opening any one of three ports, and the four-way type has two cut-outs on opposite sides which connect any two adjacent parts of four parts with a quarter turn of the valve.

A thread mill took advantage of this construction feature to cut their hot water heating costs by 10-20 per cent. They installed two-way, three-port lubricated plug valves on waste lines from each of the dye plant's 17 dye machines.

A thermostat samples the stream and if it is above 110° F it is directed to the hot water heating stream. If the temperature falls below, an air cylinder opens the multi-port valve automatically, and the waste is directed to a cold stream.

All three operations at the mill —mercerizing and bleaching, finishing, and the thread plant—are heated by a three-stage process; the first uses hot waste, the last two use high pressure steam condensate. Controlling the hot waste has provided substantial savings in the amount of steam needed.

In most textile process lines, the temperatures are relatively low (70-80 F), so semi-steel valves are used. In cases where the line fluid is of an extremely corrosive nature, stainless steel is preferred. For example, in the manufacture of rayon by the cellulose acetate process, stainless steel would be used on the steeping solution lines, acid dope lines, acid recovery lines, acetone recovery lines, and lines to the reaction kettle.

Maintenance Tips. The following maintenance tips are offered to help operators get maximum service from their lubricated plugs:

1. Plug adjustments should be snug—tight enough to keep the plug from becoming unseated, but not to a degree requiring excessive force to operate the valve.

2. Lubrication should be periodic, systematic, and with the proper grade of lubricant.

3. If the valve system is filled, a fresh supply of lubricant can easily be forced between the seating surfaces by giving the lubricant screw a few turns. Depletion of lubricant in the system will require the addition of several lubricant sticks before lubricant can be forced into the seat. In this instance, lubricant should be added until increased resistance is felt in turning the screw.

4. Turn the plug slightly when lubricating to assist in the distribution of lubricant and to determine if the adjustment is correct.

If the valve is lubricated with the adjustment too loose, it can be corrected by alternately tightening the adjustment and turning the plug. This will work out excess lubricant and permit the plug to return to its proper position in the seat.

5. At the time of adding new lubricant, care should be taken to prevent any solid foreign material from entering into the lubricant space of the valve.

Manufacturers' catalogues are a useful source of information for selecting, sizing, and maintaining the valves for a particular service. Application of the information gained from the catalogue will pay off in a dependable, effective valve system.

Cone's computer *(from page 100)*

month, and which are due in future months.

Now, with the installation of the computer, this is a weekly report. The computer made handling of dates possible and enabled a spread card to be made. Consequently, more buying data is available for Cotton Department use.

21. Weaver's Statistical Reports. Percentage of efficiency and percentage of seconds are determined for each weaver and compared with over-all averages for the department. Shift, loom model, and overseer's averages, and a deviation from each average is calculated for each weaver.

This special job, which is statistical by nature, would have taken several months if done manually. Report obtained is used in a psychological study of causes of seconds.

22. Cost Analysis. With the computer installation payroll production cards containing hours and earnings for each employee currently on the payroll are summarized by task and compared against the current standard cost. The resulting gain or loss in dollars and efficiency is punched into new cards which are used to prepare the Cost Analysis Reports.

Done weekly, the computer procedure is much the same as the conventional punched card system. Future plans call for review and expansion.

23. Fabric Summary Costs. Cards containing an average cost for labor, fixed, variable, and extra for each design are combined with fabric master cards containing additional costs for each fabric. These cards are calculated on the computer to arrive at an average total finishing cost for each fabric.

Now with the installation of the computer, this job is done on request.

Future Plans. New ideas, procedures, and equipment for integrated data processing are constantly under investigation here. If an idea shows promise, it undergoes the "experience test" before final acceptance.

Study of a random access method of accounting and control and the use of magnetic tapes with our present computer is currently under way to expand the mechanization of present applications and records associated with converting operations. It is expected that this expansion could enable better coordination of the finishing plants' operations with our Converting Departments in New York City. Improved customer service is, of course, the principal reason for considering this.

Are textile grads poor supervisors?

THE EDITORS:

I have read with interest the recent articles concerning "Why Do Trained Men Leave Textiles?" as they appeared in TEXTILE INDUSTRIES [July, 1958, p. 47; December, 1958, p. 65].

There can be no disputing the facts already brought forth, but I believe the same facts can and should be given additional interpretation. Interpretation is naturally influenced by one's own background. My own interpretation is colored by a liberal arts education leading to a Master's Degree in Psychology and over eight years in the industry as a front line supervisor and industrial engineer with three large textile companies.

Both the previous articles emphasized the attitudes and directives of top management as the basic problem. Granted that the manager has plenty of room for improvement, I can no more blame him for not knowing all the answers and using, for that reason, some bad ones, than I could blame the doctor whose patients continue to suffer from the common cold.

Just as the doctor depends on the bacteriologist and medical researcher for new ways and means of combating disease, the manager depends on his supervisors and technical assistants to provide the necessary ingredients of industrial well being.

MANAGEMENT has come to rely considerably on the textile schools to supply the necessary technically trained men. It has come as a great disappointment, this spectacle of textile graduate after textile graduate failing to make the grade, doing only an average job, or leaving the industry because of a basic incompatibility with the job of supervising people and working in harmony with others.

Now herein lies at least one of the basic problems besetting the industry: Textile graduates are not well selected and trained for many of the jobs awaiting them. While they graduate with sufficient technical information to adapt themselves with minimum experience to machine demands, they are as a group woefully inept in dealing with human demands. Knowing what to correct is not sufficient, when correction entails the cooperative efforts of from two to two hundred *individuals*.

Is there cause to wonder why the salary offered to textile graduates does not compare too favorably with that offered graduates in the sciences? The trouble is not with the market but rather with the product: Scarcely anyone would pay more for a product with such a spotty performance history.

TEXTILE GRADUATES are not a commodity exempt from the laws of supply and demand. They are not paid more for the reason that at their level of performance they are not worth more. The textile degree *per se* has not given the graduate a marked advantage over the experienced man with above-average intelligence.

There are, consequently, managers (former supervisors) with one-sided experience backgrounds. Some are basically technicians, some are hard-headed economists, and some, no doubt, are simply hard-headed. Fortunately, some are also managers in the full sense of the word. These men somehow acquired the necessary blending of knowledge about people and things that makes them effective. Such knowledge *can* be systematically obtained to a considerable extent.

It remains for us in the textile industry to recognize our administrative malfunctioning, begin to repair and replace worn parts, and immediately start in motion the wheels of a preventive maintenance system. We should bear in mind that the best mechanic makes the best fixer, until he becomes a supervisor. As a manager he often discovers that he can't fix anything.

I have written in conclusion a few more words, which I take the liberty of calling a poem, to symbolize more concisely this problem now facing the industry. Too often the manager must accept a substitute or compromise with his real personnel needs. And sometimes he's not quite sure of what will fill the bill.

Wanted—Textile Executive

Preferably a man in his thirty fives
With engaging smile and honest eyes
A man of discretion and counsel wise
Not too short and not too tall
Not too large and not too small
But not necessarily so.

He must like people and never offend
Nor willfully seek to play both ends
Strong yet unbiased, courageous, and then
Not too cheerful and not too glum
Not too smart and not too dumb
But not necessarily so.

At all times he must play an active role
Always striving to exceed each goal
Eye upon doughnut and not the hole
Not too forceful and not too mild
Not too conservative and not too wild
But not necessarily so.

We offer this man a place on the team
And pay that would set most eyes agleam
Our attributes are legion it would seem.
Not too solvent and not too broke
Not too outmoded and not without hope
But not necessarily so!

INDUSTRIAL ENGINEER

by J. B. Goldberg
Consultant to the Textile and Allied Industries
Exclusive

*Part 2**

Textile Research Achievements in 1958

Manufacturing methods and equipment, dyeing and finishing, fabric developments, and control methods and instruments are discussed

MANUFACTURING METHODS AND EQUIPMENT

The Abbott model 66K automatic cone winder was provided with means for quicker reversal of traverse at both ends and reduced noise and maintenance through use of nylon cam and thread guide and dog.

Developed by the U. S. Rubber Co., a single-step winder and former for tire cord, the Clarkson Cord Former, promised over 50% savings in floor space and manpower, but no plans were disclosed for the commercial output of this equipment.

Features of the new Fletcher Duplex Twister were five-pound package capacity and a higher rate of output than any comparable twister.

"Rather vague" might be considered a mild understatement in characterizing a report emanating from Hong Kong which appeared in an English publication last July. It was stated that a Chinese engineer had produced the "fastest winding machine in the world."

Interest continued to be demonstarted in the short processing of fibers to yarns, with appreciable progress reported since the "Nastrofil" sliver-to-yarn system of about 10 years ago. The Spanish firm of Serra displayed their "Slibomatic" drafting frame at the Manchester show, with the elimination of fly frames making tow-to-yarn spinning a practical proposition. Also exhibited was the Swiss "Filex" pneumatic under-clearer and broken-end collector. More recently details were released of the British "Permo" system, consisting of a breaker card, Scotch feed, finisher card, tape condenser, and ring spinning unit, eliminating the drafting system. A prototype unit running successfully in an English mill for over a month gave promise of effecting substantial savings.

Judging from published reports of new equipment and techniques and a number of patent disclosures, there appeared to be no slackening of interest in the manufacture and improvement of all types of bulked and stretch yarns. Last summer a New Jersey machine company made available a spindle attachment for throwing frames to allow the production of stretch yarns at speeds of up to 50,000 rpm, while a few months ago the Universal Winding Co. released news of a false-twist machine for producing "Superloft" stretch yarns with operative speeds of between 140,000 and 150,000 rpm.

U. S. patents were issued to the same company early in the year for an apparatus to produce a looped-type bulk yarn, and to the Deering Milliken Research Corp. on a method for preparing a novelty yarn by imparting an electrical charge to a filamentary strand causing filament separation, then combining it with staple fibers and twisting. The American Enka Co. was awarded a patent on an air-jet method of bulking yarn which had been first twisted, and later in the year it was reported that the rights to this patent were acquired by the Du Pont Co.

Last October another American yarn producer, the Industrial Rayon Corp., was the recipient of a patent on a method and apparatus for making a bulked yarn, while another patent assigned to the Joseph Bancroft & Sons Co. disclosed means for imparting a permanently set crimp to cellulosic fibers by first impregnating them with a heat-settable resin.

Methods for producing curled and crimped yarns were also covered in U. S. patents issued to a French company, while activity in

*The first installment of this article appeared in the February issue, pp. 105-108.

For More Information

Further information on any of the research achievements described by Mr. Goldberg in this article can be obtained by writing The Editors, TEXTILE INDUSTRIES, *806 Peachtree St., N. E., Atlanta 8, Georgia.*

developing similar modified filament yarns was revealed in a patent for a false-twist device issued to British Nylon Spinners and the announcement of Courtauld's Ltd. "Courtolon X-10" bulked nylon yarn for knitted wear.

Still another type of bulked yarn originated by the German Phrix Co. consisted of a core yarn with a high-shrinkage potential, covered with an outer yarn of non-shrinking yarns of natural or man-made fibers. Subsequent shrinkage of the core element resulted in a bulking of the wrapper component.

Warping, Slashing, Weaving, and Knitting. For stylists concerned with preparing warps for hand looms or miniature power looms, Edw. J. McBride Co. offered a new laboratory warping unit, complete with creel, warping reel, and beaming attachment. A revolutionary approach to warp winding was the English Model N Thomas Holt electromagnetic machine which stressed automatic tension control and patented spindle drive with no mechanical connection between the driver and driven part of the spindle, eliminating friction or weaving surfaces.

Also of English origin was a new warp preparation unit eliminating open width sizing and drying installation as well as rebeaming. Speeds of 60 or more yards per minute of sized and dried warp were claimed possible. The Shirley Institute exhibited a dry-feed attachment for an automatic size box with provisions for automatically feeding starch powder and molten tallow into the mixing unit. Details were also published on improvements in the original size box.

A British patent issued to a German manufacturer covered the treatment of warps with molten wax or similar sizing materials forced into the yarns by passage through a bath of molten metal. National Starch Products, Inc., demonstrated a new cationic starch, "Cato," at the Southern Textile Exposition. The new warp sizing was described as being electronically charged, the strong bond between the size and the fiber eliminating the need for expensive resin binders such as polyvinyl alcohol.

Details of a German method for handling warp beams in which flexible wooden wrapping backed with a fabric serves to protect beams of yarn prepared direct from the spinneret were given last May in a British textile journal. Spraying to prevent fraying was recommended by the Massachusetts manufacturer of a new silicone warp spray with claims of effective binding of broken yarn filaments during weaving by a product which was nonstaining, quick-drying, and readily removed by warm water.

The new Draper shuttleless loom described in a patent issued in 1957 was reported to be in use in several mills and a discussion of construction and operating details was presented at a meeting of the textile division of the ASME in New

York in December. Further information on the East German Neumann Gripper shuttle loom weaving from a cone supply of filling yarn mounted on each side of the loom was published last July, and it was rumored that the French Kiener high-speed loom, a vertical type which weaves multiple widths of 30" to 40" fabric at 300 picks per minute, was likely to be built by a U. S. loom manufacturer.

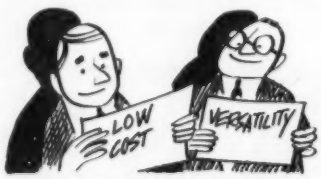
Although the Universal Winding Company's "Unifil" loom winder was introduced before last year, it was only during the past 12 months that orders were placed for thousands of units, particularly by mills where it had been subjected to extensive evaluation. In addition to eliminating separate winding room operations and inventory of yarn on quills, claims were made for improved fabric quality because of no handling of bobbins and soiling of yarn and a reduction in the frequency of filling bands due to yarn variations likely to exist from one large package to another, especially in blends, dyed or textured filament yarns.

A novel method for the contour weaving of spherical, conical, and other shaped fabrics for reinforced plastics was described by two California engineers in the July issue of TEXTILE INDUSTRIES.

As an aid to improved weaving efficiency, the Swiss Loepfe optical electronic weft feeler responds while the shuttle is in full flight instead of in terminal position.

Developed at the British Shirley Institute, a new automatic loom, designed particularly for weaving fabrics of man-made fibers and yarns, featured simplified picking mechanism with piston-operated picking stick check-motion, speeds of up to 250 picks per minute, low filling tension, and one-third fewer parts then are used in comparable Swiss looms.

Low cost and extreme versatility



for the production of loop pile carpets with a polyvinyl chloride backing to anchor the pile tufts were advantages of a new English tufted carpet machine.

Three new looms of Russian manufacture were described in an English publication last January. One was of the circular type, limited to the weaving of fire hose and bagging but having an output of three times that of conventional Russian looms. The second was an intricate two-sided machine with yarn drawn from filling cones by a series of disks arranged on a common shaft, while the third was said to be a square shaft loom with a disk drum for forming the cloth at the rate of 21 yards per hour.

Arrangements were made to ex-

port to this country four new German high speed raschel knitting machines for producing elastic fabrics, laces, and bulkies. The Kidde Co. offered a raschel-type knitting machine capable of knitting carpets with extensive patterning possibilities, a 52″ machine being available for sampling developments.

The new Gibbs positive gear let-off operating from the machine cam shaft was announced as a device to eliminate tricot knitting machine vibrations and shadow marks. The Reading Type 60 full-fashioned hosiery machine boasted increased efficiency and production rates, while the same company's new multifeed seamless machine was being readied for mill tests.

Scott & Williams, Inc. made available to licensees of the new process equipment for converting seamless hosiery knitting machines to produce the Getaz or loopless toe, closed by seaming a gusset on the bottom of the foot. Advantages offered by this toe are elimination of looping, seam does not show, and top of the foot does not wrinkle.

DYEING AND FINISHING

Uniform bleaching of cotton goods to high brightness with improved absorbency, better hand, and freedom from residual chlorine were some of the advantages attributed to a new bleaching technique of Columbia - Southern Chemical Corp., still in the pilot plant stage last fall. The Cook Machine Co.'s "Rotomatic" steamer retention unit open width bleacher, reputed to cost one-half as much as conventional conveyor steamers while occupying 50% less space was suitable for desizing and scouring as well as handling goods in rope form.

"Rock and roll" finally arrived

on the textile scene with the announcement of an English process for continuous bleaching of knitwear. Utilizing two tanks, up to 1,000 yards of fabric are given a free movement, being tossed back and forth from one tank to the other. It was stated that another "rock and roll" followed the bleach for the application of antichlor before washing.

Also of English origin, the Smith "Autobleach" machine for open width bleaching in a single stage process was adaptable for caustic scouring as well as cold water dyeing with the new reactive dyestuffs.

A Swedish concern developed a chemical additive and activating method for use with sodium hypochlorite batch bleaching and a new pad bleaching machine. Savings of 30% in sodium chlorite consumption were achieved without developing fumes and corrosion, while operating speeds of 100 yards per minute were attained on all weights of fabric. Montecatini of Milan, Italy, was credited with the design of a one-step process for the preparation of cotton goods for dyeing by the use of ozone at low temperatures instead of hydrogen peroxide.

Equipment offered for pressure dyeing included an Italian machine, equipped for automatic reversal of liquor flow, utilizing perforated beams and operating at pressures up to 275 F, and two machines for woven or knitted fabrics by the Gaston County Dyeing Machine Co.

The Chemstrand Corp. provided information on a simple technique for obtaining two-color effects on fabrics containing regular Acrilan and the new whiter Acrilan 16; the latter remained undyed when selected wool dyestuffs were used or could be dyed with cationics which reserved the regular Acrilan.

Suggestions for the dyeing and finishing of blends of Orlon and cotton by pad-steam methods were given in the March issue of the Du Pont *Dyes & Chemicals Technical Bulletin*. Further progress in the development and use of the Imperial Chemical Industries' Procion reactive dyes was recorded during the last year, and the German "Remazols" claimed to have good fastness to chlorine as well as light fading.

A varitone cloth dyeing method whereby color was padded onto cloth at random while it was in rope form, subsequently returning it to open width form was the subject of a patent issued to United Merchants & Manufacturers, Inc. Research workers of Imperial Chemical Industries, Ltd., found their "Phoryl" phosphorus-containing resins satisfactory for simple and efficient printing of polyethylene, Terylene, and nylon fabrics and films with good fastness to washing and dry cleaning.

A modified roller printing technique for tufted carpeting was the joint development of British Tufting Machinery Ltd. and Bradford Dyers' Association of England. The original machine was designed to print widths up to 54″ in three colors, but plans were under way for making feasible the handling of 12-foot widths.

Aimed at increasing the use of rayon in blends with cotton, three major rayon producers presented results of a comprehensive study of resin-treated 80-square print cloth blends. It was disclosed that breaking strengths and tear resistance were superior to resin - treated 100% cotton fabrics with equal wrinkle-recovery angle.

The country's largest mill research organization, the Deering Milliken Research Corp., launched their "Belfast" nonresin wash-and-wear finish for cotton fabrics last June. Within a short time a number of licensees were signed up to employ this process for turning out "self-ironing" fabrics with a particularly high degree of wrinkle-resistance in the wet state.

A number of products were directed at overcoming the chlorine-retention problem likely to be en-

countered with many resins used for wash-wear finishes. New polyethylene compounds introduced by the Semet-Solvay Division of Allied Chemical Corp., used in conjunction with melamine resins, were claimed to improve crease-recovery, tear strength and abrasion resistance.

"Oxone," a dry bleach recommended for home use on resin-

finished wash-and-wear garments frequently damaged by repeated chlorine bleaches was a product of the Du Pont Electrochemicals Department, offered to the trade for packaging. Another division of the same company recently announced a new "Zeset MC" thermosetting resin for imparting durable crease-resistance and dimensional stability to cotton and rayon fabrics while chlorine retention was reduced to a low level.

The English Company of Tootal, Broadhurst Lee received a U. S. patent on a treatment to improve the abrasion resistance of fabrics containing 50% or more of rayon, utilizing a selected area and melamine formaldehyde resin and heating in an atmosphere containing at least 50% superheated steam.

"Keep it from shrinking or stretching and make it quicker to dry and easier to iron" appeared to be the keynote of a major campaign launched by chemical manufacturers as well as dyers and finishers during 1958, and the number of candidates for election was exceeded only by the number of claims made for their performance. According to an announcement made early in the year, the "Fas-Dri" process contributed wrinkle-resistance, quick-drying, and other desirable wash-and-wear properties to woven and knitted rayon and rayon blended fabrics, using resins which effected extremely stable cross-linking.

Burlington recently offered "Burlux" as a resin finish for cotton-rayon draperies which can be laundered through the spin cycle of any automatic washing machine. English developments included Courtaulds Ltd. "F-49" finish for spun rayon curtain and loose-cover fabrics, and Calico Printers Association "Calpreta-Fixt" permanent finish for finishing fabrics and curtains, combining stability with ease-of-care features.

"Sil-O-Paque" was described by the Cold Spring Dyeing and Processing Co. as a mechanical finish for synthetics and blends to impart a smooth hand with an opaque quality, also reducing seam slippage in some constructions. Dow Corning's new "Sylmer" finish was announced as a silicon-base durable water-repellent for cotton fabrics and blends.

Undoubtedly inspired by the success of some of the synthetics in providing crease and pleat-retention in woolen and worsted garments, the Australian Scientific and Industrial Research Organization released complete details of their "Si-Ro-Set" chemical process for giving similar characteristics to all-wool materials. Originally announced in 1957, the method has been employed in Australia for some time, but the first treated American garments were marketed just a few months ago.

The English Wool Industries Research Association applied for patents on a process for making wool shrink-resistant by treatment with a mixture solution of peracetic acid and sodium hypochlorite, stressing cold processing, easy control, low cost, no significant alteration of weight, no obnoxious smells, and no color removal required. According to a report published in an American journal, a French process for wool shrinkage control relied upon the use of polyethers of polyhydric alcohols.

The Clorox Co. was awarded a patent which might enable them to join the voice of a well-known toothpaste manufacturer who sings the praises of this product by expressing wonder at where the yellow went. Yellowed nylon fabrics were restored to whiteness by soaking in a hypochlorite solution and a weak organic acid found in every household—vinegar or citrus fruit juice.

Proposed to combat odors associated with the decay of bacteria which usually attack perspiration, an American Cyanamid Co. patent disclosed means for imparting durable antibacterial finish to textile fibers by bringing them into contact with an aqueous solution containing minute qualities of neomycin, then drying. A less scientific approach to the problem of odors in textiles was suggested by a Michigan company in marketing a clothing deodorant spray under the precise name of "Garment Odor Rid."

Among other foreign developments relating to dyeing and finishing which were described in the literature last year were Courtaulds Ltd. "Carrier LB" dyeing assistant for triacetate fibers, particularly effective in heavy shades, and the Italian "Xerox" photographic printing machine, a variation of a medium-sized cylinder machine, allowing dry photoreproduction of colored designs in fabrics with the use of a dark room.

From Germany came reports of a continuous steam heat-setting machine for nylon tricot fabrics and a liquid chemical to be applied to warp knitted fabric to eliminate curl, the product having no effect on hand and resisting washing and dry-cleaning as well as temperatures of up to 210 C.

Stellamcor Corp. completed arrangements to market the Swiss Hoger electrostatic flocking and screen printing unit in the United States, with features of operating speeds of about 109 to 327 yards per hour and capacity for printing up to four colors.

Demonstrated at the Manchester, England, machinery show last year was the Kuster-Hunt patented "swimming roller," floating on a pressure oil cushion, eliminating camber and having a uniform nip irrespective of load applied on mangles or calenders.

NEW DEVELOPMENTS IN FABRICS

One of the first announcements of the year relating to new fabric developments was that of the United Elastic Corp., describing an elastic webbing, dry-cleanable and resistant to damage from heat and laundering. Erlanger, Blumgart & Co., Inc. introduced "Earl-Glo Warmer" as a newly perfected combination of lining and interlining, the latter consisting of a light-weight nylon batting which was chemically united with the conventional lining fabric, eliminating bulky quilting and extra cutting and stitching.

Another combination product composed of a urethane foam laminated to both woven and knitted fabrics of cotton and man-made fibers was being supplied by three mills, according to the Scott Paper Company, makers of Scott-Foam. Bonded fiber interlinings introduced last year were Callaway Mills' "Warma" of 80% wool and 20% nylon, and the Star Woolen Mills' "Ny-Sul-Loft" all nylon self-supported washable and dry-

cleanable batting. Recorded in an English journal was a description of a method of producing an insulated lining by still another American firm, the technique involving the application of a mica compound and a chemical foam to the back of a lining fabric.

Said to be manufactured under a patent first issued to a Swiss inventor, the "Velcro" self-adhering all-fabric closure consists of two strips of narrow woven nylon fabric, one with a crochet-like hook surface of monofilament nylon, the other with a nylon velvet or pile surface. Contact by a slight pressure results in a strong adherence, tests indicating extremely long wear-life in repeated use. Before the end of the year numerous applications were seen on the market, the pressure closures being used in outerwear, belts, men's shorts, and pajamas.

Rayon - cotton blended woven and knitted fabrics were identified and controlled for quality and performance under programs launched by the American Viscose Corp. and American Enka labeled "Cotron" and "Blendura," respectively. "Hushalon" was the distinctive name given to a decorative felt, said to combine the richness associated with the fabric's noise-reducing properties and easy application. Offered in many colors and treated to be fireproof and to repel water, oil, dust, and moths, this material was used successfully in a restaurant, a model apartment, and a night club.

The thermal pliability of dynel fiber was utilized in the production of a wide range of new heat-shaped articles. Woven, knitted, or non-woven fabrics of dynel or dynel blends were embossed, curved, or stamped for a variety of end-use items, such as covers for furniture arm rests, protective packaging for delicate instruments, ribbed battery separators, and stiffened interlining.

Hand-washable silk pongee in 45 colors, claimed to be shrink-resistant and water-repellent was marketed by an American importer in midsummer. A washable dynel-wool woven fabric made with low-twist yarns was represented as showing less than 2% shrinkage after five machine-washings at 140 F, while tensile strengths were claimed to be superior to those of all-wool in comparable weights and construction.

Bigelow created a new carpet weave at a moderate price to duplicate the design, color, and texture variation of expensive hand-drafted rugs, and Callaway Mills announced plans to show a new knitted-type broadloom in which the jute backing was made an integral part of the carpet fabric. Agilon texturized nylon yarns were scheduled to make an appearance in carpeting early in 1959. In England, blankets were made in lace constructions on standard Nottingham lace curtain machines of spun rayon and about 10% cotton forming the warp backing.

Longer-life nylon laundry press cloths were the development of British Nylon Spinners Ltd. The process uses tannic acid-formaldehyde resin, wash-fast at high temperatures, and tests showed up to three times normal life when used for free steam press work and polished hand presses. Probably suggested by the observation that "over-shrunk" fabrics exhibit a degree of elasticity, the Bradford Dyers' Association of England patented a technique for producing elastic fabrics or yarns by mechanically s h r i n k i n g synthetic thermoplastic materials in a compressive shrinking machine to a predetermined length shorter than their normal length. Heat-setting and cooling the yarns or fabrics in their altered form stabilized the elastic properties.

Shortly after Indian Head Mills introduced Pequot "Easy - Care" no-iron cotton bed sheets, two competitive manufacturers offered an all-nylon sheet constructed with alternate warp ends of Taslan textured yarn. The bulked yarns were credited with imparting greater cover and opacity while overcoming the objectionable cool feel and slippery surface of conventional woven filament nylon sheets.

Last fall "Saaba" false-twist type bulked yarns of nylon and Dacron began to appear on the market in limited amounts in woven fabrics and the producers of "Tycora" textured yarns reported similar uses for their yarns. Stretch-type nylon yarns suddenly found an almost insatiable market with the overnight surge in popularity of leotards or tights, which seemed to be in demand by every female from the age of toddlers through the teen-age style-setters.

Elastic-type all nylon hose for men and women were introduced under the brand names of "Activ-8" and "Supp-Hose," with claims made for relief of leg fatigue without the usually unattractive appearance of conventional surgical stockings. In England, Taylor-Woods Hosiery, Ltd., offered "Lifelon" snag-proof nylon hosiery said to be made on new continental machines which lock each stitch and combine the advantages of a conventional fine-gauge full-fashioned machine with those of a lock-knit machine, while from that same country came an unconfirmed report indicating that another firm was working on the development of "non knitted" hosiery to be prepared by some fiber bonding process.

To those whose memory of the hosiery industry does not go back beyond 20 years ago, the recent announcement of another English firm's entering production of women's silk hosiery might be hailed as the advent of a new product, although it was conceded that these would not constitute a threat to nylon.

A German manufacturer introduced a range of stockings made with foreshortened feet for women who want to display their well-manicured toes. Special reinforcement threads pass invisibly between the toes and prevent the stockings from slipping up the feet.

New merchandising ideas for nylons were also suggested during the past 12 months. One, probably inspired by the popularity of cooler smoking cigarettes, was a plan to market hosiery with a menthol finish, likely to be a mild antidote for hot burning feet, while a Pennsylvania firm reported skyrocketing sales of nylons put up in two-pair tin cans with a packet of soap included. A more novel approach

was taken by an English manufacturer of corned beef who offered a pair of full-fashioned stockings in exchange for seven labels from tins of corned beef.

A unique use for nylon was proposed in the patent application of a German inventor who devised a system of nets to enmesh bank bandits and prevent their quick get-away, presumably by automatically dropping on them when touched off by an alarm.

Until the Fiber Labeling Act becomes effective next year, fabricators of acrylic pile fabrics continued to make bold comparisons with the pelts of the animal kingdom. Princeton Knitting Mills introduced scatter rugs with heads as well as textures of the panda and polar bear and their new "Temptation" fur-like coating of 100% acrylic fibers simulated the guard hair hand and appearance of mink. Just before Christmas this same manufacturer announced a line of Ancora "Call of the Wild" high-pile acrylic liners to be available this year. A new outlet for dynel fiber was in high-fashioned ladies' wigs, available in a choice of colors including white, red, blue, pink, orchid, and blonde. The claim was made that these could withstand damp days or rain without any ill effects.

Continuing interest was shown in the possibilities of disposable paper apparel, and it was reported that a testing group of mechanics, cooks, truck drivers, and firemen was wearing textured green paper garments at the QM Research and Development Laboratories in Natick, Mass.

TESTING AND CONTROL INSTRUMENTS AND METHODS

Introduced at the Greenville Show by the Universal Winding Co., the Portable Uniformity Meter provided a simple tool for checking uniformity of sliver, roving, and yarn in process, permitting instantaneous readouts of the effects of adjustments.

The Lindly "Electrotense" was described as an improved yarn tension control providing adjustable force by means of a small electromagnet. In addition to contributing labor savings, smoother and more evenly wound warp beams and increased yardages per beam, this device was said to be applicable to circular and flat-bed knitting machines, full-fashioned hosiery machines, and for creel-to-loom direct weaving.

Fabrionics, a Long Island manufacturer, marketed a new photoelectric unit monitor for detecting yarn defects in warping, stopping the warper for a fault as small as a single broken filament, and, if desired, counting the number of defects at the same time.

Said to be a refinement of a device first suggested in 1940, an instrument for the rapid measurement of yarn diameters was described in *Textile Bulletin* last September, while at about the same time an English company introduced a new instrument for the accurate measurement of the quantity of yarn wound onto paper tubes.

Heretofore publicized for such nonindustrial applications as projecting the returns of balloting in political elections, the Univac electronic computer was utilized as a new research tool in the engineering of fabrics by Du Pont scientists. It was demonstrated that one could, for example, determine the best Orlon blend for maximum pill-resistance by analysis of the data obtained from only 27 specified sweater constructions instead of over 3,000 garments.

Details of the design and operation of an automatic single fiber tensile strength tester capable of handling up to 40 samples per hour were published last April, and a commercial model of a cohesion tester developed by the West Point Manufacturing Co. for determination of the forces in drafting sliver or roving was offered by Custom Scientific Instruments, Inc.

Two new testing devices made available by Scott Testers, Inc. during the past year were a yarn crimp tester, conforming to the ASTM standard method and constant - rate - of - extension tensile testing machine for all textile materials. This company also exhibited at Manchester, England, the "Scotomatic" unit for their IP-4 incline plane tester for automatically running off 100 tests on tire cords. New data on the stress-strain properties of a number of fibers and suggestions as to how the data could be used advantageously by mills and dyers were released by the Du Pont Company following a comprehensive program of investigation carried out at the School of Textiles, N. C. State College.

Quite a few foreign instruments and methods were described in the literature during 1958. From Germany came reports of a dynagraphic elasticity meter for determining yarn elasticity, thread breakage, diameter evenness, and the frictional coefficient of textile materials on metal, glass, or ceramics, and a hand-operated hydraulic fabric bursting strength tester.

Among new English devices were an electronic thread tension gauge, a rapid moisture measuring instrument, and an electronic instrument for the accurate counting of filaments in continuous filament yarns at the rate of up to 200 samples per hour. The British Cotton Industry Research Association released details of a method for determining the twist in nylon monofilament yarns and means for estimating the time required for conditioning a given textile package.

A two-dimensional load-extension tester which recorded those characteristics of the warp and filling of a fabric simultaneously was designed at the laboratories of the Imperial Chemical Industries Ltd. The wiping efficiency of linen towels was determined by means of a unique method proposed by the Linen Industry Research Association whereby the length of water traces was recorded after drawing the sample over drops of tinted water on a special surface.

The Swedish Textile Research Institute published in TEXTILE INDUSTRIES results of a study of a photographic method for estimating cotton neppiness in card webs, not unlike the photographic yarn appearance charts employed in this country; and for the measurement of woven fabric crease angles, the Dutch Enka laboratories designed an apparatus said to be an improvement over the commonly used Monsanto tester.

A preview of how a fabric might look before going to the trouble of weaving it was afforded by a viewing box built by an English inven-

tor containing a mirror on which the weave pattern has been marked and two cards or frames on which threads intended for warp and filling are wound.

Classification of fabric streaks by plastic replicas was described at a meeting of the AATT in New York by a Du Pont research worker as an aid in diagnosing causes of streaks in filament yarn fabrics.

With the unprecedented amount of publicity being given to wash-and-wear garments, the appearance of wrinkles and creases in fabrics became a major topic of interest in the textile industry. Some of the television promotions seemed to be competing with those of the cosmetics industry on behalf of products to banish the wrinkles from fair ladies' features.

Two Du Pont scientists described a "Creasometer" for measuring crease or pleat sharpness in a fab-

ric, and laboratory tests showed promise of permitting accurate prediction of the retention of pressed creases after garment wearing and laundering. An AATCC committee proposed a tentative method for evaluating the appearance of wash-and-wear fabrics after home laundering using photographic standards with ratings in five classes, and the Plastics Division of the Monsanto Chemical Co. devised a three-dimensional representation in plastic from the five photographs as a substantial improvement for rating according to these standards.

Earlier in the year the U. S. Testing Co. proposed a two-class system based on "no-iron" and "minimum care" and announced a "Verification" program for all branches of the industry with laboratory evaluation procedure based on results obtained by trained observers utilizing a special viewing device. The Good Housekeeping Institute also publicized their standards for rating wash-and-wear fabrics and garments and the Du Pont Co. issued a special bulletin giving details of their laboratory method for evaluating similar performance characteristics.

A Phoenix, Arizona, organization reported the development of a new Equatorial Mount with mirrors attached for outdoor exposure testing which was claimed to fade dyed fabrics from two to ten times faster than the Fade-Ometer.

A unique method for removing cotton or rayon from nylon blend fabrics consisted of preparing a sandwich of the sample between two layers of cotton cloth and polyethylene sheets, then sealing the edges around the punched hole of the area from which the cellulosic component was to be removed. The cellulose is dissolved in cuprammonium hydroxide solution after pulling off the cotton layer, then removing the polyethylene.

Devices and techniques were developed by the U. S. Army Engineering Laboratories for fungicide testing, and an American Cyanamid Co. scientist demonstrated the deterioration of wool, cotton, fur fiber, and Orlon at high temperatures by an ingenious microscopic technique. A rapid method for identifying dyed or undyed fibers microscopically through use of selected mounting media was described in an early issue of the *American Dyestuff Reporter,* and a U. S. Dept. of Commerce report gave details of procedures for the identification of resins commonly used for textile fabric coating.

ORGANIZATION ACTIVITIES

Substantial contributions continued to be made by the limited number of nonprofit organizations in this country and abroad which are devoted to conducting research for the textile industry. In addition to reports on specific projects prepared for limited distribution to project sponsors and supporters of the Textile Research Institute at Princeton, N. J., and the Institute of Textile Technology at Charlottesville, Va., as well as the many commercial research organizations and educational institutions which undertake investigations in the textile field, the many open meetings held during the year serve to disseminate findings and encourage the exchange of ideas.

The annual conference of the Textile Research Institute last March featured papers on progress in man-made fibers and yarns and their applications as well as on concepts of cotton research and the status of chemical modifications of cotton. A technical session on advances for wash-and-wear cottons and a series of discussions on the latest developments in dyeing and finishing as well as the testing and evaluation of fabrics and finishes were featured at the annual convention of the AATCC held in Chicago in October.

The Cotton Processing Research Clinic sponsored by the National Cotton Council in February stressed reports on combing studies while the Chemical Finishing Conference sponsored by the same organization attracted a record-breaking audience in Washington last fall for participation in a program concentrated on advances in finishing to achieve optimum wash-and-wear performance.

Those privileged to have attended the Gordon Research Conference on Textiles heard reports on a variety of topics ranging from new results in wool chemistry to deformation mechanism of polymers and some aspects of fiber and yarn lubrication.

Of particular interest to weavers and finishers of fabrics for coating was a two-day session on military applications of fabrics for coating which took place at the QM Research and Engineering Center in Natick, Mass., in October, and the conference on radiation and high temperature behavior of textiles sponsored by the N. Y. Academy of Sciences, Polytechnic Inst. of Brooklyn, and U. S. Navy Clothing and Research Laboratory, held in New York a few weeks later, afforded an opportunity for a most interesting duscussion of the thermal requirements for functional textiles and the high temperature properties of organic and inorganic fibers.

A technical symposium conducted by the American Rayon Institute at Akron, primarily for technical representatives of the tire manufacturers, featured papers on noise level studies, impact resistance, the comparative performance in passenger tires, and recent advances in rayon tire yarn, while nonwoven fabrics was the topic of the January New York Board of Trade symposium.

Some problems relating to the laundering of wash-and-wear garments were aired at meetings arranged by the American Institute of Laundering on behalf of the commercial laundries and by the American Home Launderers Manufacturers' Association, for those who did their laundering at home. The two groups were undoubtedly in agreement on discouraging all believers in washing garments in the sink and allowing them to drip-dry.

Significant progress continued to be made by the Research Committee of the AATCC on projects pertaining to the wet processing of textiles, while Committee D-13 of the ASTM kept pace with the industry in the preparation of standard test methods for fibers, yarns and fabrics. The Appalachian and N. Y. Sections of the AATT continued to play an important part in the dissemination of information on technological advances in textile technology at their regular meetings, while the Fiber Society spring and fall sessions stressed the more theoretical aspects of fiber and fabric research.

Our Canadian friends were most active in conducting not only local section meetings of their various technical textile societies, but also in sponsoring the first Canadian Textile Conference in Montreal in May and the Sixth Seminar at Kingston which offered a wide range of papers on subjects from yarn preparation to mill engineering with participants from the United States as well as abroad.

Over 350 members and visitors from 17 countries attended the 43rd annual conference of The Textile Institute at Edinburg, Scotland, early last May. Emphasis was on fiber blends and developments since 1952. The third post-war overseas conference of the Institute was held at Gothenburg, the subject being "Mechanical Properties of Textile Materials" and the annual Mather lecture was on "A History of Winding."

In summary, the record of textile research achievements for 1958 is one of which the industry as a whole may well be proud and is definite evidence of the fact that the frequent criticism of our being apathetic when it comes to research is unjustified.

EDITORS' NOTE: Further information on any of the research achievements described by Mr. Goldberg can be obtained by writing The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N.E., Atlanta 8, Ga.

How to stabilize Dacron filament yarns on a slasher

■ BECAUSE decorative fabrics with the warp made of "Dacron" polyester filament yarn often contain one or more filling yarns (rayon, silk, acetate) which are degraded by the high temperatures (350-440 F) required for stabilization of the Dacron by heat setting, and due to the high cost of single end preshrinking in an autoclave, a stabilization method applicable to warp sheets of Dacron yarn has been developed and announced by Du Pont*.

Procedure. Dacron warps having an acceptable level of shrinkage (2% or less) can be produced during the slashing operation by passing the yarn sheet over a heated surface prior to its entering the size box (see the accompanying sketch).

The warp sheet may either be sized or run dry (size pan entered or bypassed after heat stabilization).

With a strip heater that is 12" wide producing a temperature of 420 F (plus or minus 5 F), operate the slasher at a speed of 25 to 40 ypm. Apply tension to the yarn as follows:

Yarn	Grams/End
30/14/20Z-55	5
70/14/18Z-55	7
70/34/7Z-56	7

It is expected, but not confirmed by actual trial, that decreases in residual shrinkage can be obtained by the use of a wider heating plate, decreased speed, decreased tension, and increased temperature.

How to Check Results. The degree of stabilization attained by the above procedure may be determined in terms of residual shrinkage in the processed yarn by the following simple laboratory test:

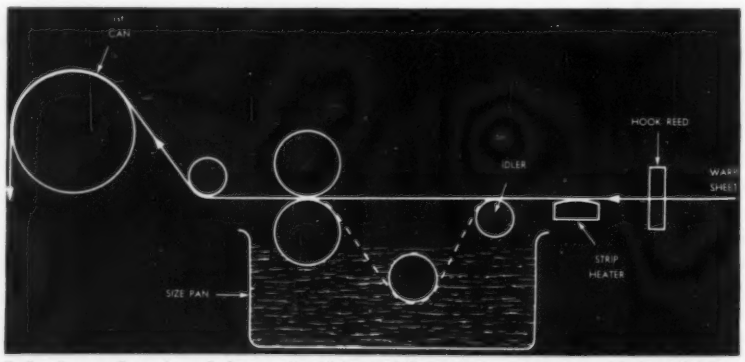
Fasten three 50cm lengths of warp yarn to a frame and weight lightly at their free ends (approximately 0.6 g on 70 denier sample—an ordinary No. 1 paper clip may be used; for deniers other than 70, use .01 g/den).

Place the frame containing the samples in an oven and expose the yarn to a 300 F temperature for 30 minutes. Remove the samples from the oven and again measure their length. Determine the per cent shrinkage as follows:

$$\frac{\text{(original length—final length)}}{\text{original length}} \times 100$$

Some typical fabric shrinkage figures for warp stabilized yarns are as follows:

Yarn	Per Cent at 300 F
30/14/15Z-55	1.97
70/14/18Z-55	2.00
70/34/7Z-56	1.98



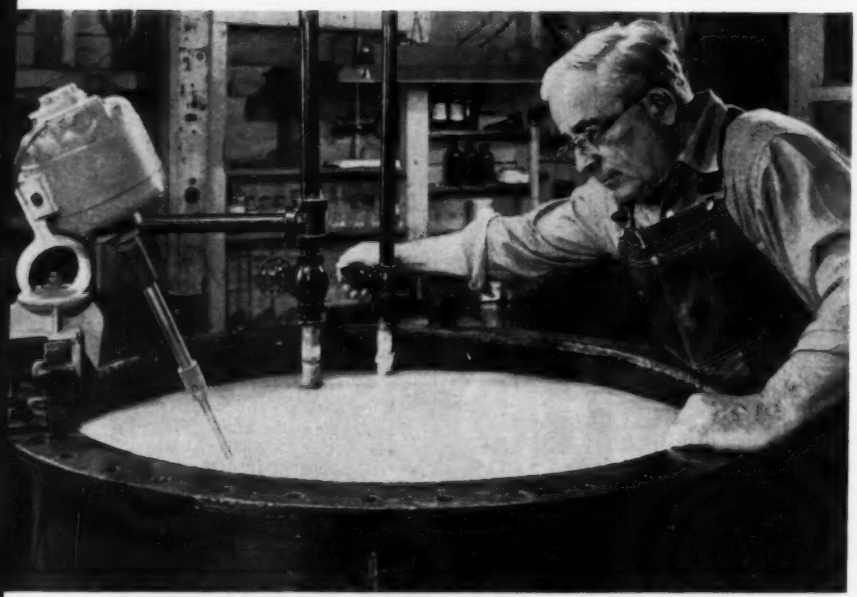
Path of yarn through a slasher equipped for stabilizing Dacron filament yarn. Stabilization can be performed with or without size. Dotted line in size box indicates path of yarn when sizing is desired.

*Bulletin D-104, entitled "Warp Stabilization on the Slasher of Filament Yarn Warps of 'Dacron' Polyester Fiber," available from Technical Service Section, Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Despite peaceful setting, J. J. O'Donnell Woolens, Inc., and Blackstone River do not always see eye-to-eye. Heavy industrial activity upstream requires special treatment of intake water to insure quality processing of cashmeres and pastel woolen fabrics.

WOOLEN MILL LICKED WATER PROBLEM

New coagulant aid speeds up and improves process-water treatment



Coagulant aid is batch-mixed with hot water in steel tank; slurry is then fed to clarifier on lower level. It will remove color, speed and improve floc formation in raw river water.

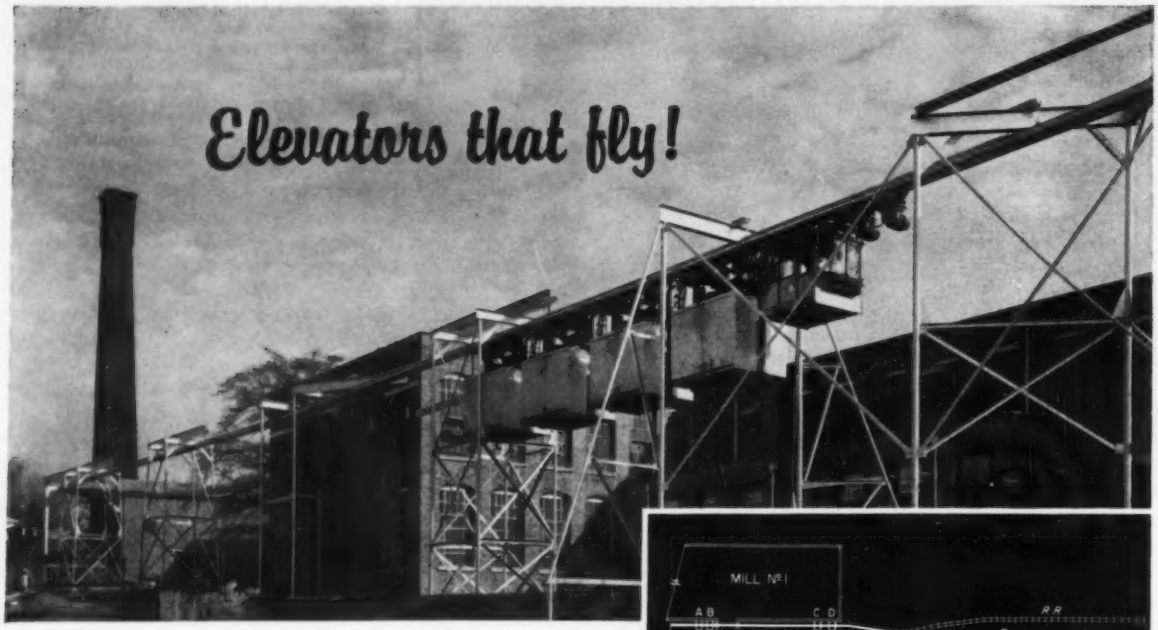
CONSIDERING the fastidious nature of the fairer sex, the manufacture of delicate cashmere fabrics and high quality ladies' woolen goods is a tough assignment, even under the most favorable circumstances. But the job can assume m a m m o t h proportions when the only source of process water is downstream from a steel mill, a sewage disposal plant, and several other woolen mills.

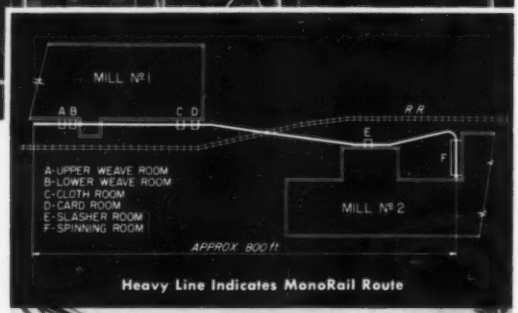
Water clarification then becomes all-important in plant operation.

Such was the situation back in 1956 at J. J. O'Donnell Woolens, Inc., Farnumsville, Massachusetts. The O'Donnell plant is located along the Blackstone River, some 20 miles northeast of the Connecticut-Rhode Island-Massachusetts boundary junction.

At this point the river is heavily contaminated, largely because of heavy industrial activity upstream. In addition to high color from organic and inorganic dyes, an assortment of industrial wastes and the usual suspended matter, the river is saturated with detergents to such a degree that a dam slightly upstream of the plant is normally coated with 6 to 12 inches of foam.

Despite careful chlorine-alum-soda ash treatment at the clarifiers, foreign dye particles and wetting agents from the intake water plus free alum carried over from the settling basins slipped on through the filters and into the plant system. Carryover was particularly serious during cold





Heavy Line Indicates MonoRail Route

AMERICAN MONORAIL

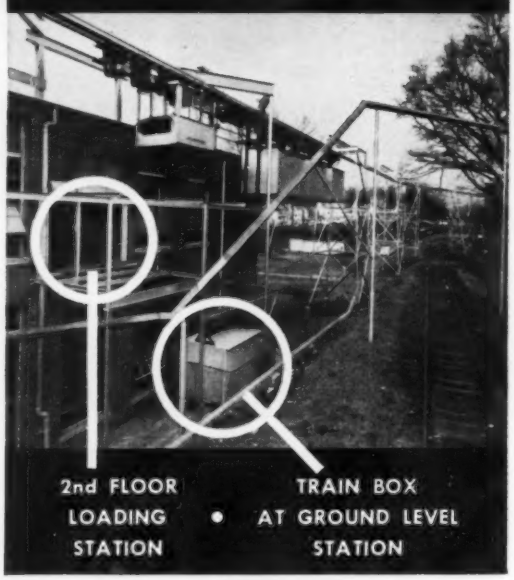
transports cars between 2 mills-

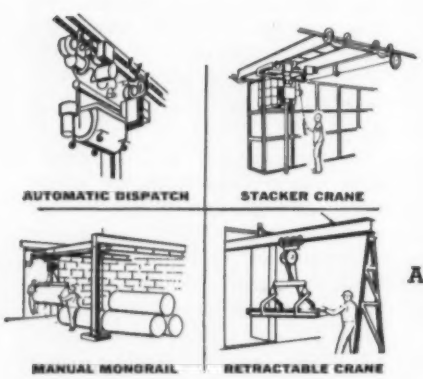
stops at ground and upper level stations.

The equivalent of several elevator loads of material can be transported from building to building and from floor to floor by this modern materials handling system. Erected entirely out of doors, the MonoRail operates overhead, safely above railroad and all other traffic, and takes up no space at all inside the mills.

Loads transported consist of warp beams, boxes of filling quills, roving, trucks of drawing sliver and cloth. Approximately 132,000 lbs. from stations at each mill are transported during an 8-hour shift.

All operations can be controlled from the cab which is equipped with heaters, electric fans, windshield wipers, a gong and spotlights for night operation.





Member of American Textile Machinery Association

AMERICAN MONORAIL COMPANY

OVERHEAD HANDLING EQUIPMENT

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weather or extremely dry periods.

Problems posed in the dye house —where high quality process water is necessary to insure continuous pastel tones—were critical. Even with heavily increased alum dosages, color removal was poor, frequently necessitating reprocessing.

Boiler control became all the more difficult as detergents led to priming or foaming, and dangerous carryover into the stream system itself.

In August of 1956, company management started an all out search for a remedy to the now-critical problem. One of the products investigated was a newly developed coagulant aid, a blend of processed bentonitic clay and organic polyelectrolyte. The aid proved highly successful in jar tests, not only because of the speed of reaction, but also due to its ability to settle out even the most minute suspended particles.

Better yet—from an operational standpoint—the aid could be easily prepared and added to the present feed. No changeover in treatment was necessary. Based on successful laboratory results, the coagulant aid feed was incorporated into the clarification process.

As used today, the aid is dry fed into a 200-gallon dish-bottomed tank equipped with a portable electric mixer. The slurry is then fed into the clarifiers through a solenoid-operated valve, actuated by the alum pump so that both feeds are simulatneous.

This is the order of feed as now employed: chlorine, alum, coagulant aid slurry, and soda ash. As pointed out by Joseph E. Mee, general manager, the best "run" is at a pH of approximately 6.3, chlorine at 1 ppm, and alum at 2 grains. Initial dosage of coagulant aid was 10 ppm, but has since been reduced to approximately 5 ppm.

Mr. Mee had this to say about results thus far: "The aid not only accelerated the clarification process, but also eliminated all carryover. Floc obtained now is far heavier, larger and, naturally, settles a lot faster. And color removal is no longer the headache it used to be, particularly in cold weather and during summer droughts."

The new aid is currently used on a stand-by or emergency basis, depending on river conditions. When the danger flags go up in the boiler room or dye house, the coagulant aid slurry is immediately added to the regular treatment system.

With the aid in use, a 50 per cent floc is obtained in 10 minutes, and an 80 per cent floc in 20 minutes. This, Mr. Mee estimates, makes the settling rate with the aid nearly three times faster than without. And that, he points out, is with a corresponding 25 per cent reduction in alum feed.

Says technical men must broaden their interests, help management

▪ TECHNOLOGISTS have been urged by a Canadian industrialist to broaden their interests and accept the new importance being offered alongside management.

H. Roy Crabtree sees a growing need for specialists to help management in corporations, industries, and business generally, face the complexities of today's business.

"There are an increasing number of policy problems which legal, economic, and technical skills can help solve."

Speaking as chairman of the Primary Textiles Institute, Mr. Crabtree was addressing a joint meeting of the Canadian Association of Textile Colourists & Chemists, Quebec Section, and the Textile Society of Canada, Eastern Division, at the Ritz Carlton Hotel, Montreal.

"Technical men should not only improve themselves in their specialty; they must broaden their knowledge if they are to have an understanding of how things can best be done on a co-operative basis."

In advising the technologists to participate more in activities within the general business community, the speaker cited the Canadian Chamber of Commerce, Canadian Manufacturers Association, and Boards of Trade as examples of where businessmen deal jointly with problems outside the scope of individual company or industry.

"Technologists should become more active in this type of voluntary work. Their specialized knowledge can be extremely valuable in dealing with labor matters, trade problems, public finance and taxation, etc."

Mr. Crabtree pictured management today as the office through which decisions were made, based on the opinions and knowledge of many specialists working to a common objective.

"First demand of management today is for people with imagination; men of originality who have disciplined themselves to keep acquiring new skills and knowledge. The companies that survive in this day of sharp competition are those who learn quickest how to use originators."

The Canadian textile industry was offered as an example of where technology and management must continue to exert all possible self-help through close cooperation. "Our industry is efficient; our machinery and equipment are good and modern; yet we are losing the Canadian market to imports from low-cost countries."

Mr. Crabtree said the industry had gone about as far as it could in developing its own protection against "this vicious competition" and now must depend on government action for further correction.

"The only action which could help us overcome more of our problems by ourselves would be a complete technological break-through which would allow us to reduce the wage content of our products to the point where they would be equated with those of other countries.

"Many people are working for fundamental solutions to this technological problem. For instance, the chemist is trying to find the one perfect fiber, and the mechanical engineer is trying to develop processing methods which will greatly reduce the steps involved and the handling of materials."

He added that management was fully aware of the problems involved and was doing everything possible to assure that two-way communication —upward and downward—was maintained throughout all organziations. "Ideas of technicians have to reach management just as mangement has to know the reaction accorded ideas passed to the technician."

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64% of fiber used in '57 was cotton; 26.5% man-made fiber; 9.5% wool

■ THE END USE consumption of all textile fibers in 1957 totaled 6,376,-900,000 pounds, according to the *Textile Organon*, statistical bulletin of the Textile Economics Bureau, Inc. This compares with end use consumption of 6,475,700,000 pounds in 1955 and 5,614,500,000 pounds in 1949. These data are made available as the result of a Bureau study of the consumption of the major textile fibers in 102 end uses annually over the 1949-1957 period.

Man-made textile fiber consumption in the latest year (1957) amounted to 1,685, 900,000 pounds or 26½ per cent of the total, and cotton consumption came to 4,085,400,000 pounds or 64 per cent, while wool consumption at 605,600,000 pounds made up the remaining 9½ per cent of the total of these fibers.

In 1949, man-made fibers, which were then predominantly rayon and acetate, constituted 20 per cent of all fibers consumed in the end uses covered by the Bureau survey, while in 1957 man-made fibers made up 26½ per cent of the total. By the latter year, however, the non-cellulosic and textile glass fibers were utilized to the extent of 517,900,000 pounds, or 8 per cent of total fibers compared with only 88,800,000 pounds or 1½ per cent in 1949, while rayon and acetate consumption at 1,168,000,000 pounds in 1957 made up 18½ per cent of the total, compared with 1,023,700,-000 pounds or a similar 18% in 1949.

Cotton in 1949 accounted for 67 per cent of all textile fibers with consumption placed at 3,767,100,000 pounds. Actual cotton consumption increased to 4,085,400,000 pounds in 1957, but its share of the total fell to 64 per cent. Wool consumption, amounting to 734,900,000 pounds in 1949 or 13 per cent of the total, fell to 605,600,000 pounds or 9½ per cent of the total by 1957.

Home furnishings absorbed the greatest poundage of fibers in 1957, with a consumption of 1,515,500,000 pounds. In this category, cotton was used to the extent of 980,300,000 pounds, wool 159,900,000 pounds, and man-made fibers 375,300,000 pounds. In 1949 the comparative figures were: total fibers 1,066,100,000 pounds, cotton 760,800,000 pounds, wool 219,800,-000 pounds, man-made fibers 85,500,-000 pounds.

In the Industrial Uses category, where the greatest poundages of man-made fibers were consumed in 1957, an anomaly has resulted in that the total poundage of all industrial fibers has generally decreased relative to the expanding industrial sector of the economy. This trend points up the greater utility poundage of the man-made fibers in industrial applications, notably in the tire industry.

Factors Affecting Fiber Use. The Bureau points out that the following factors affecting fiber consumption should be considered:

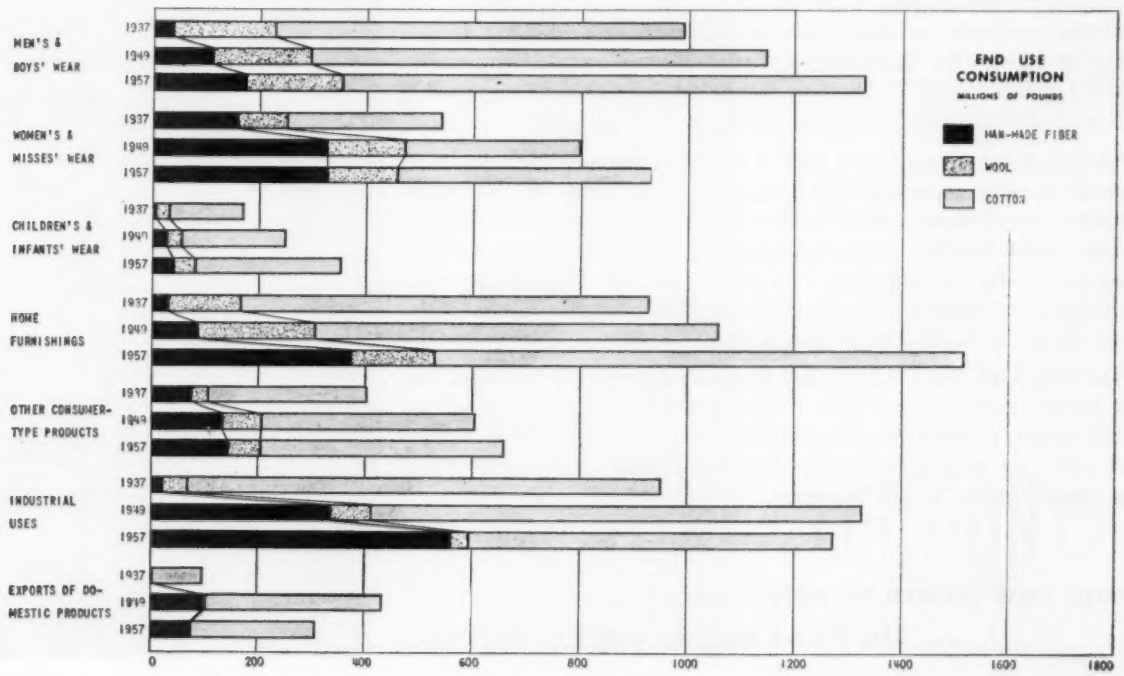
1. There is a trend to lighter apparel, which means not only the use of cloth weighing less per yard but also fewer yards to the average garment in many cases.

2. There is the "color-style" element in such items as women's dresses which leads to obsolesence of clothing before its full wear life is realized.

3. The different ways in which consumers use certain apparel items, as for example, the "sport shirt"—years ago it was worn almost entirely for casual wear, but today it is also widely used in place of a work shirt.

4. The shortening of the work week, in both hours and days, and a higher standard of living have increased the demand for leisure wear clothing, apparently without a proportionately lower demand for business wear items.

5. There have been gains in fiber consumption in children's wear, which relates to the increase in that segment of the population.



No. 10 in a series—how your Du Pont salesman is backed by many sales-building activities, including Fiber Research, Technical Service, Fabric Development and Merchandising.

At Du Pont, electronic brains help unravel a knotty sweater problem

It looked as though several hundred thousand different sweaters of "Orlon"* acrylic fiber would have to be made and scientifically tested to find the best *combination* of hand and performance. And the job would take many years.

But Du Pont researchers didn't want to wait that long. They selected the important yarn and fabric construction variables and translated them into a form that could be handled by a giant electronic computer. It clicked off calculations at 22,000 per minute! And in six hours the Du Pont computer provided data on optimum constructions. In the photo at right, Orv Wetmore, a Textile Fibers research manager, shows a sweater made by the new technology to two of the engineers who analyzed the electronic data which made it possible.

Electronic computers are only part of the vast system of technical and scientific apparatus used by Du Pont to solve problems for the textile industry. Continuous research by hundreds of fiber technologists, backed up by teams of chemists, physicists, and other scientists, is devoted to the development, manufacture, and improvement of Du Pont fibers. Knowledge gained through this research is constantly being shared with the textile industry.

It has long been Du Pont's belief that the market for its fibers can best be advanced by providing helpful assistance to all levels of the textile industry. Through your Du Pont salesman you, as a customer, have ready access to a range of technical and merchandising information unique in the textile industry.

From raw fibers to retail sales
... Du Pont builds profits for you

PRODUCT and PROCESS NOTES FROM DU PONT

Stabilizing Warps of "Dacron" Polyester Fiber on the Slasher** — A practical method has been developed for stabilizing "Dacron" filament warp yarns, allowing the weaving of loom-finished fabrics. Warps having an acceptable shrinkage level (2 per cent or less when subjected to ironing temperatures of 325°F.) can be produced during slasher sizing by passing the warp sheet over a flat, heated surface prior to entering the size box. The instrument used in the operation is an electrically heated chrome-surfaced steel plate. Fabrics produced with these warps retain their stability through normal laundering or drycleaning processes. This development is expected to offer new opportunities to weavers of loom-finished fabrics, such as bedspreads, draperies, and casements.

"Ondulé" Rayon — "Ondulé", Du Pont's new continuous-filament rayon yarn containing randomly spaced, entangled slubs, is making fashion news in dresswear, suitings, draperies, curtains, and casements. It is now available in 150, 250, 450, 1,100 and 2,200 deniers. The unusual slub characteristics of "Ondulé" impart to fabrics a distinctive texture which resembles that obtained with certain types of silk. It is expected that this new yarn will also become important in men's sport shirts and neckwear.

Type 707 Nylon — Du Pont has announced a new nylon yarn designed and developed for cordage—Type 707 Nylon. Ropes made from this new nylon have 16% higher breaking strength and three times greater resistance to internal abrasion than regular nylon.

The new ropes are not weakened by rot or mildew and have exceptional resistance to wear, plus the light weight and easy-handling characteristics of conventional nylon lines.

*"Orlon" is Du Pont's registered trademark for its acrylic fiber.
**"Dacron" is Du Pont's registered trademark for its polyester fiber.

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Knitting Section

by William D. Frye
Carolina Lee Knitting Co.

Exclusive

A mill man gives some tips for knitting

full-fashioned leotards from stretch yarns

FOR THE past six or eight months, leotards have been the hottest item in the hosiery industry. Sales have been booming, and probably will continue at a high level for at least the next few months.

There are some problems involved in knitting, seaming, and inserting elastic in leotards; here our primary interest will center on the knitting machine.

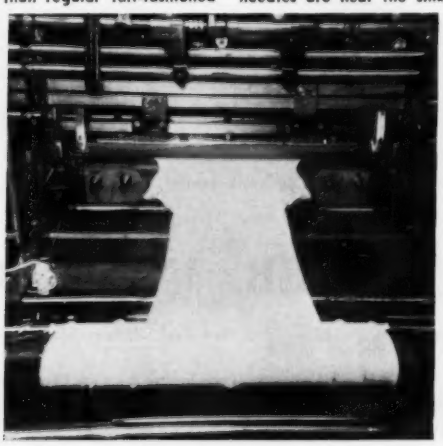
What Yarn to Use? In making full-fashioned tights, a 70/2 stretch yarn is usually used on a 51-gauge machine. On a 60-gauge machine, 50/2 is about as heavy as you should go.

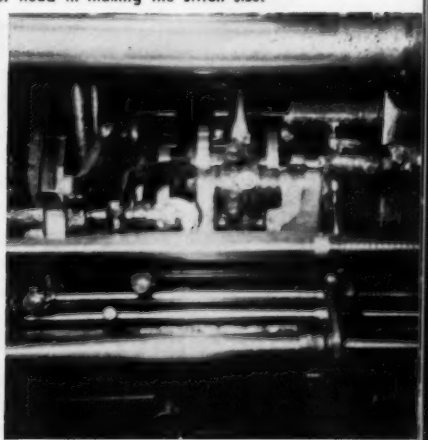
This yarn is a filament nylon that has been heat-set by the twist-untwist method; the process makes the filaments stand out in a fluffy effect. This makes the yarn tend to hang on any rough place that it may touch on the knitting machine. So care must be taken that there are no cuts on the eyelets, snarl eliminators, snappers, and especially on the yarn carriers.

The carriers sometimes take rough treatment so they should be polished with emery paper or emery cord before using this yarn. Set the carriers with the bottom of the tube slightly below the top of the sinker. The yarn will make a good selvage.

Carrier Tube. The next consideration is the selection of the carrier tube. Knots will not pass freely through an ordinary size tube. For

Left: Stretch yarn is threaded like this in making leotards on Kalio machines. Center: Blanks appear bulkier than regular full-fashioned hosiery. Right: One of the Kalio regulators, "run in" until the needles are near the sinker head in making the stitch size.





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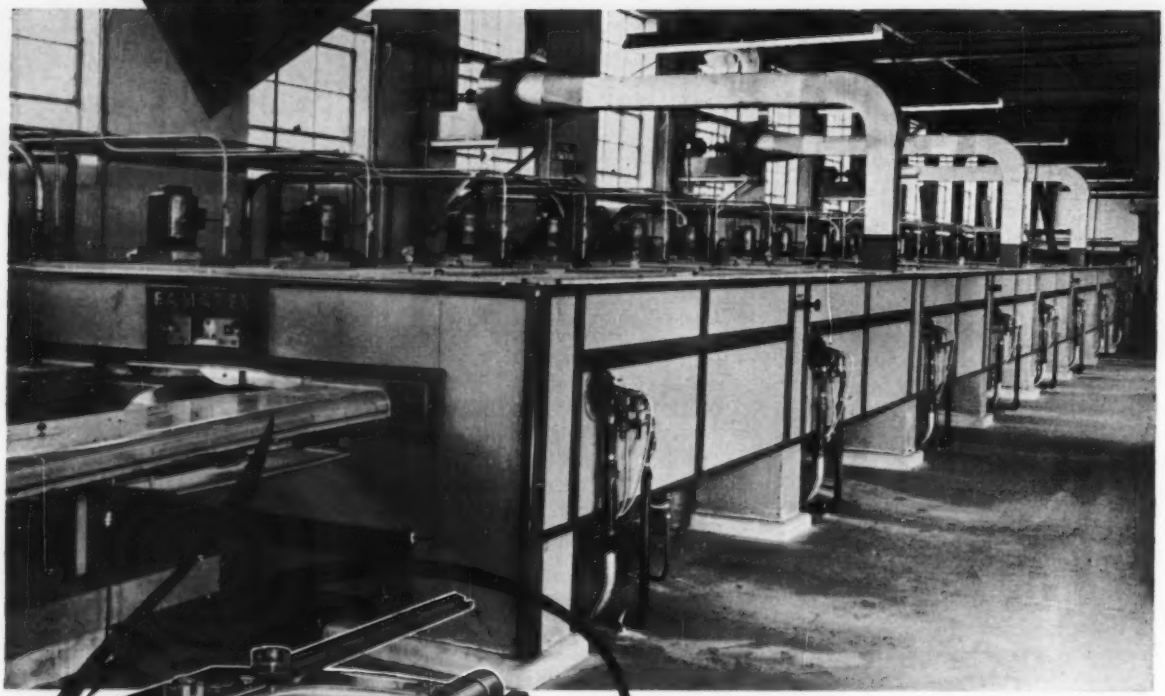

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An Honored Name in Textile Machines Since 1903

Plan now for "Knitting Week" in Atlantic City

▫ KNITTING mill management and operating executives who have not already made reservations for hotel accommodations during "knitting week" in Atlantic City are reminded to do this immediately. Write to the Housing Bureau, 16 Central Pier, Atlantic City, N. J.

There will be plenty to see and do. The 44th Knitting Arts Exhibition — sponsored by NAHM, NKOA, and Underwear Institute —opens on Monday, May 4 and runs through Friday, May 8. Also scheduled to be held during the week are annual conventions of the hosiery and underwear associations.

Details on these, plus a special exclusive feature which emphasizes the necessity of flexibility for profitable knitting mill operation, will appear in the April issue of TEXTILE INDUSTRIES.

THE EDITORS

example, in using a 51-gauge tube and 70/2 stretch yarn the tube will squeeze the yarn, causing it to load up on top of the carrier. This will eventually press off the stocking and will surely do so as soon as a knot comes to this point.

An extra large tube will have to be used, preferably one that has a large hole, thin walls, and is pressed so that it will fit between the sinkers with room to spare.

Length Control. One characteristic of running stretch yarn is difficulty in holding length variations to a minimum. The length will vary from one cone to another and from a full to a partially filled cone of yarn. You can easily imagine how the finished tights would look with one leg longer than the other.

Tights should be made by matching lefts and rights coming from the same section. Making the lefts on one set followed by rights on the next set. On a Lieberknecht machine, this can be done automatically by using the two sets as one cycle on the top control shaft.

In using stretch yarn the regulator will have to be run in until the needles are near the sinker head in making the stitch size. Right away a stitch formation problem will develop. We have found the best way to overcome this is to pull the needle bar bits out enough to make a clear stitch. If the individual needle bars are lowered, you may have trouble in narrowing or on the automatic hook up or turn welts.

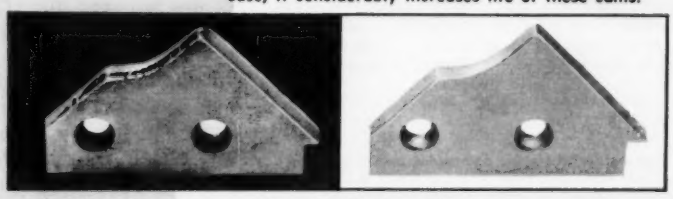
The welt regulator will have to be used from start to finish. The reason for this is obvious. After the regulator is moved in enough to make the correct stitch size, needle breakage will occur on a Kalio welt turner at the welt turn position. This is caused by the abnormal position of the needles as the welt hooks move up after placing the stitch on the needles. This is corrected by changing the contour of the main regulator cam and possibly the welt regulator cam at this point.

Mark the cam at the position where the welt hooks move up past the needle beards and grind on the emery wheel. This will allow the needle beards to drop back out of the way of the welt hooks as they pass. Any fixer can watch the welt turning and make the correction on the cams.

In making the wide and narrow panels for the split there will be no shock absorber action where the carriers stop on the inside of the panel. This will cause friction bounce at high speed. It can be largely overcome by using an additional stop at the pointex where there is an arrester that may be utilized.

CHROMALLOY *Doubles Life*
of KNITTING MACHINE CAMS

The patented CHROMALLOY diffusion process produces a wear-resistant chromium carbide surface on the high carbon steel cams used in circular knitting machines. This surface will not peel or crack. Similar in hardness to tungsten carbide and known as the Chromacarb Case, it considerably increases life of these cams.



Knitting machine cam (left) made of SAE 1095 high carbon steel after one month 24-hour-a-day service. Wear ridges on top surface cause an uneven knit. Identical CHROMALLIZED cam (right) has no wear ridges after same service and lasts 2 to 4 months.

CHROMALLIZED thread guides which demonstrate a similar increase in service life are available also.

SPECIFY CHROMALLIZED CAMS AND THREAD GUIDES FROM YOUR REGULAR SUPPLIER.

For technical information write to:

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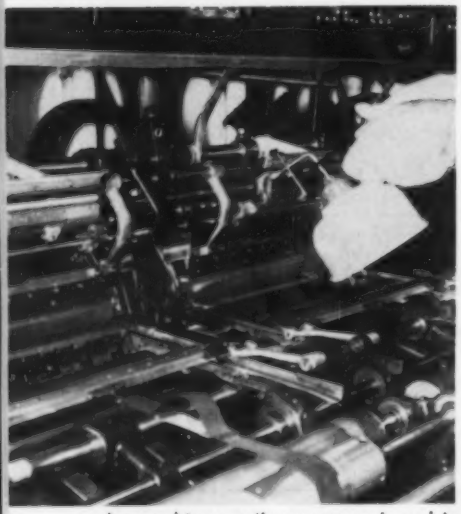
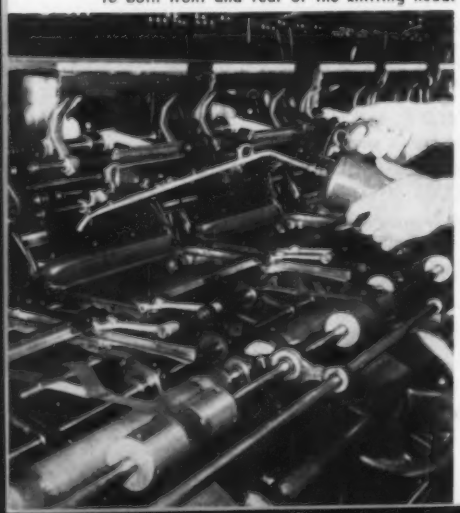
WHite Plains 6-0020

Knitting elements are cleaned by hot-water-soluble oil compound applied with a brush.



A manual-type continuous sprayer is used to apply needle oil to the knitting elements.

A hot-water-soluble oil compound is applied to both front and rear of the knitting head.



LUBRICATION: key to low f-f upkeep

Rigid cleaning and lubrication schedule helps this mill keep costs competitive

by Miles A. Yates
Exclusive

A RIGID cleaning and lubricating schedule is a prime requisite of preventive maintenance and a necessary adjunct to top quality fabric production and to keep operating difficulties at a minimum.

Effective procedures followed in one full-fashioned hosiery mill include a weekly cleaning of all parts closely associated with the knitting operation. A hot-water-soluble oil compound is used to clean sinker-heads, verge plates, narrowing rods and fingers, carrier rods and carriers, snappers, thread guide rods, bridges, and welt bars. Accumulated size deposits on carrier rods are removed quickly and efficiently by application of the solution.

A commercial petroleum solvent is used to clean shafts, cams, and other parts not directly connected with the knitting operation but subject to accumulation of foreign matter. The solvent aids in doing the job quickly, efficiently, and economically. Rags are used to apply the cleaning solution to avoid leaving waste particles (as when using cotton waste) which might wear out machine parts.

Rust spots are removed with a fine grade of emery cloth (000), taking care that emery dust or metal particles do not fall into the machine and cause additional wear. Moistening troughs are flushed out every six months and removed from the machine once a year for thorough cleaning.

Only four different lubricants are used in this mill: (1) A stainless needle oil; (2) A high grade light machine oil for general lubrication, including cam mechanisms, bearings, spindles, and other parts lubricated through oil holes; (3) A heavier grade of lubricating oil equivalent to SAE 40 motor oil for use in wick-type oilers; (4) A nonfibrous soda soap grease for use in antifriction bearings and miscellaneous gears or other parts requiring a sliding action.

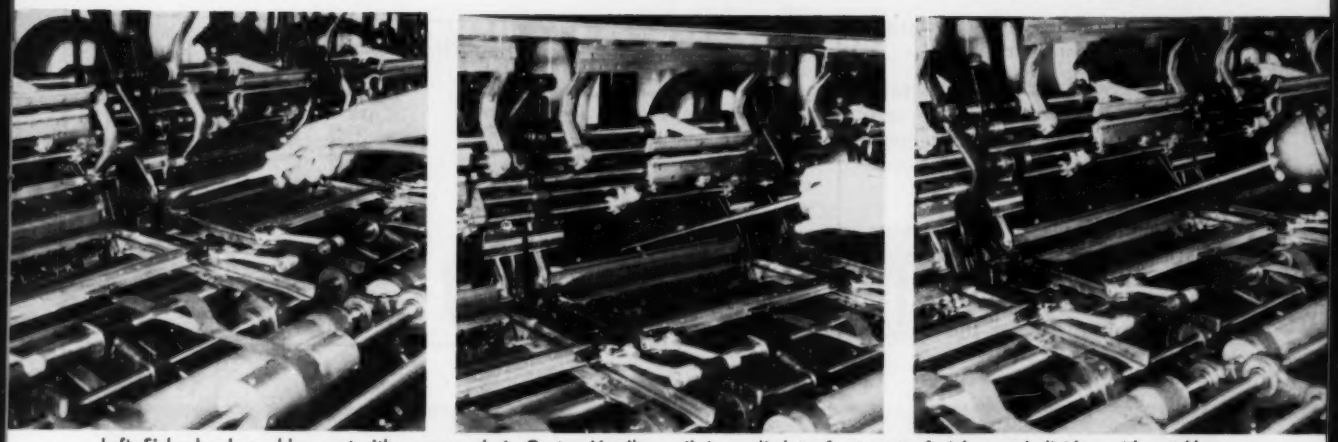
One man is assigned to the job of lubricating all knitting machines in this mill, and he does nothing but attend to cleaning and lubricating in accordance with the established schedule.

On a daily schedule, a continuous sprayer of the manual type is used to spray needle oil over needles, front of sinker-head, carriers, and points while the machine is in motion. On weekends, if the machines are to stand idle for more than six hours, these parts are sprayed at beginning of the idle period for protection.

Twice weekly a high grade light machine oil is applied to cam rollers, carrier rods, drive chain, Coulier crosshead and bar, spindles, and slurcam box bar.

Weekly lubrication is done on Monday morning, at which time a high-grade light machine oil is used to lubricate the entire machine, except the oscillating shaft bearings. All sight feed oilers are refilled during the week as necessary with SAE 40 oil.

On the first Monday of every



Left: Sinker heads are blown out with compressed air. Center: Needle oil is applied to backs of sinkers and dividers with catchbar back; spout is drawn across head from left to right. Right: Needle oil is applied to front part of sinkers and dividers with catchbar forward; spout of oil can is allowed to lie flat for smooth movement. Rigid schedule is prime requisite for preventive maintenance.

month, all oscillating shaft bearings are lubricated with a high grade light machine oil.

Every six months ball bearings are lubricated with a high grade nonfibrous, neutral, soda soap grease. Points lubricated include the handwheel shaft, drive shaft at drive sprocket, drive chain idler, motor, and the motor-generator set.

This mill attributes its continued successful operation to remaining competitive through keeping unnecessary costs at a low level; preventive maintenance — adherence to a rigid program of cleaning and lubrication by competent and responsible personnel—is viewed as an important key to keeping costs low.

How to benefit from the new federal tax law

■ HOW manufacturers may benefit from provisions in the new federal tax law which were designed to help small business buy machinery and other depreciable property (other than real estate) was explained in an article in a recent issue of "The Needle's Eye", a publication of Union Special Machine Co.

If a manufacturer buys up to $10,000 worth of machinery in any one taxable year, he can now take an original and additional write-off on this capital equipment of 20 per cent in the first year. This additional 20 per cent in the first year comes off the top of the purchase price, after which "straight line," "double declining balance", or "sum-of-the-digits" depreciation is applied to the remaining balance over the 10-year period, including the first year, or over whatever period the manufacturer is using.

How this applies to a purchase of $1,000 worth of equipment by a manufacturer now depreciating over a 10-year period is shown in per cent and in dollars in the accompanying tables.

Two advantages in the new law will be observed, the article pointed out:

(1) It gives a business, large or

STRAIGHT LINE METHOD

Year	Yearly % Depreciation	5-Year Total	Yearly $ Depreciation	5-Year Total
1	20% + 8% = 28%		$ 280.00	
2	8		80.00	
3	8		80.00	
4	8		80.00	
5	8	60%	80.00	$600.00
6	8		80.00	
7	8		80.00	
8	8		80.00	
9	8		80.00	
10	8		80.00	
	100%		$1,000.00	

DOUBLE DECLINING BALANCE METHOD

Year	Yearly % Depreciation	5-Year Total	Yearly $ Depreciation	5-Year Total
1	20% + 16% = 36.00%		$360.00	
2	12.80		128.00	
3	10.24		102.40	
4	8.19		81.90	
5	6.55	73.78%	65.50	$737.80
6	5.24		52.40	
7	4.19		41.90	
8	3.35		33.50	
9	2.68		26.80	
10	2.15		21.50	
	91.39%*		$913.90*	

*Note—This is not carried out fully in decimal places, and this method never fully depreciates the equipment. The law permits changing to the straight line method toward the end so the write-off can be completed.

small, an additional depreciation break during the first year;

(2) Recovery of a higher percentage of investment at the end of five years when replacement with new equipment should be considered.

Full advantage of the benefits offered may be realized by buying at least $10,000 worth of new equipment each year, according to a tax expert quoted in the article.

SUM-OF-THE-DIGITS METHOD

Year	Yearly % Depreciation	5-Year Total	Yearly $ Depreciation	5-Year Total
1	20% + 14.54 = 34.54%		$345.40	
2	13.08		130.80	
3	11.63		116.30	
4	10.18		101.80	
5	8.72	78.15%	87.20	$781.50
6	7.27		72.70	
7	5.81		58.10	
8	4.36		43.60	
9	2.90		29.00	
10	1.45		14.50	
	99.94%*		$999.40*	

*Note—These figures do not total exactly 100% and $1,000.00 only because they have not been carried out fully in decimal places.

Why have a retirement plan?

■ MANAGEMENT and operating executives of textile mills which do not already have a retirement plan for employees may profit from these answers to questions frequently asked trust officers of the Wachovia Bank & Trust Co., Charlotte, N. C.

The questions are italicized to distinguish them from the answers which follow.

Why should my business have a retirement plan for its employees?

There are a number of reasons—probably an all inclusive one would be that it is just good business, and:

1. It helps hold key personnel and reduce turnover.
2. It increases employee efficiency.
3. It attracts better employees.
4. It makes retirement more attractive and opens the way for younger men to advance.

For these and other reasons, many companies have formal retirement plans for their employees.

What about Social Security benefits? I thought they were supposed to take care of people in their old age.

Retirement plans are designed to supplement Social Security benefits. In many instances "retirement" without supplemental income would be equivalent to "firing."

I have only a small business; maybe it is too small for a retirement plan?

The size of a company alone is not the measure of the need for a retirement plan. There are many companies with very few employees that have sound plans.

I already provide for my retired employees; in addition to their Social Security benefits, I pay each one whatever I can from current earnings. Why have a formal plan?

Most employers are aware of their obligations to employees with long and faithful service and attempt to look after them in their old age, as you are doing. However, paying whatever you can at the time is a costly and undependable method—there may even be times when you will not be able to pay retired employees out of current earnings. It is not reasonable to expect employees to feel the same sense of security and loyalty which they would feel with a definite plan. Moreover, the employer derives little benefit from the informal method other than the personal satisfaction that he has done the best he can for the particular employee at that time.

Just what are the advantages of a formal retirement plan?

There are many; some are listed in the answer to your first question. Here are more that are important:

1. The employer sets aside amounts regularly out of earnings which the future pensioner helped produce.
2. Tax advantages:

a. The amounts set aside are deductible for income tax purposes within liberal limits, and, thus, the employer has the use of money he would otherwise pay out in taxes.

b. Income and capital gains in the retirement trust are not subject to tax.

c. Employees are not taxed while their benefit funds are accumulating —only when such benefits are received.

How much will a retirement plan cost?

The plan will cost even less than what it eventually will pay your retired workers. The money you contribute will be invested, and the tax-free income will either enhance the benefits or reduce your cost.

How much will my company have to pay?

This will depend on whether you have a PENSION or a PROFIT-SHARING PLAN.

What is the difference?

(1) A PENSION PLAN is an arrangement whereby you set aside sufficient funds each year to provide for the payment of definite benefits to your employees upon their retirement.

(2) In a PROFIT-SHARING RETIREMENT PLAN, you agree to set aside a portion of your profits each year; your employees upon their retirement get whatever has been accumulated for their respective benefit.

Which is the better plan?

That depends on you and your company. Very few companies are exactly alike—their problems and needs vary; a retirement plan must be tailor-made to fit the particular company.

What type of plan should I use?

Again, the plan which best meets the needs of your company:

(1) In a PENSION PLAN, the employer can give the employee an accurate estimate of the benefits he will receive upon normal retirement.

(2) Under a PROFIT-SHARING RETIREMENT PLAN, the employee's benefits on retirement will vary, depending on the prosperity of the company.

This would seem to make the pen-

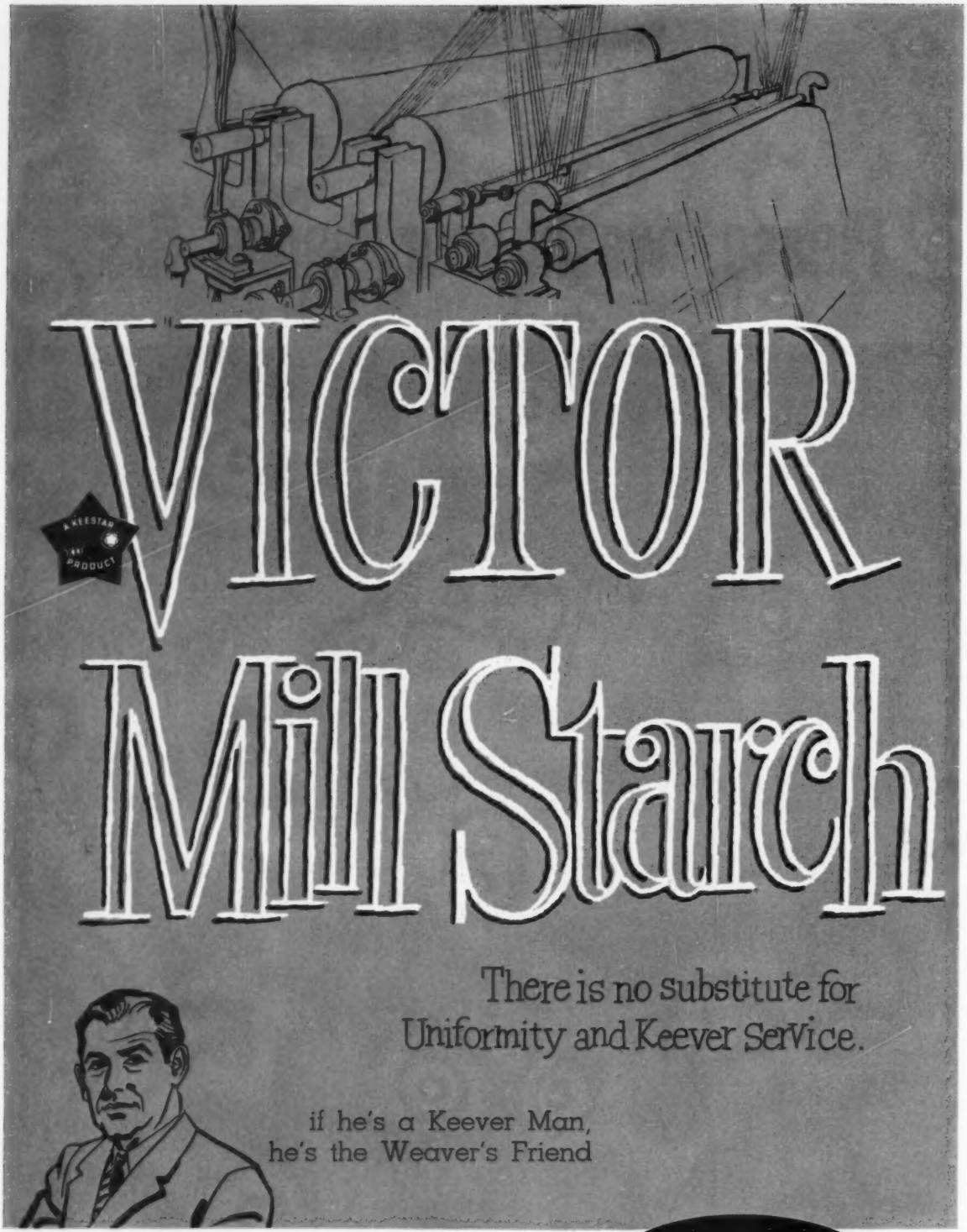
(Continued on page 188)

KNITTER HINTS No. 55

Please, wash your hands first

Don't take a chance on unwrapping pirns
or otherwise handling yarn with dirty hands

Trim along this line to post on bulletin board in knitting department



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HOW OTHERS MANAGE

ASTM tentative wash-and-wear definition

THE EDITORS:

May I congratulate you on the series of articles concerning wash-and-wear in the November, 1958, issue. It's a nice job of handling something that is pretty hard to handle.

Fiori and others have quoted a definition [in the article "Wash-and-Wear: Progress and Problems"] which the American Society for Testing Materials was contemplating, shall we say. I thought you might be interested in the full definition which has been adopted as a tentative.

Wash-and-Wear Definition To Appear In The ASTM Book of Textile Standards

Wash-and-Wear (Wash - Wear)[1], adj. 1. General—A generic term applied to garments which satisfactorily retain their original neat appearance after repeated wear and suitable home laundering with little or no pressing or ironing.

Note 1. "Retain their original neat appearance" means that the garment will be essentially free from undesirable wrinkles both during wear and after laundering and retain any original pressed-in creases or pleats. The garments should meet normal consumer demands for such properties as durability, color stability, shrinkage, etc.

Note 2. The wash-and-wear performance of a fabric or garment depends on several factors including the types and amounts (percentages) of fibers used, the fabric construction, the finishing treatment, the presence of a colored pattern (either woven or printed), and the methods used for washing and drying. All of these factors contribute to the overall performance and determine in any specific instance, how closely a fabric or garment will approach acceptance. This situation shows up in the variable behavior of a specific fabric or garment under different conditions and is reflected in the use of specific commercial terms such as the following:

2. Specific:

(a) Machine-Wash, Tumble-Dry—A term applied to a variety of fabrics or properly fabricated garments which can be laundered in domestic type washing machines with regular centrifuging (spinning) followed by suitable tumble drying. This is frequently termed "automatic wash-and-wear."

(b) Machine-Wash, Line-Dry — A term applied to a variety of fabrics or properly fabricated garments which can be laundered in domestic type washing machines with suitable water extraction followed by line drying.

(c) Machine-Wash, Drip-Dry — A term applied to a variety of fabrics or properly fabricated garments which can be laundered in domestic type washing machines, if rewet after the final centrifuging or removed before centrifuging (spinning), and followed by drip drying.

(d) Hand-Wash, Drip-Dry — A term applied to a variety of fabrics or properly fabricated garments which can be washed by hand, removed without twisting, wringing or centrifuging, and followed by drip drying.

Undoubtedly there will be some controversy and possible reverses, but it is my belief that ASTM is doing the correct thing in putting something down that can be shot at by various segments of the industry.

CONTRIBUTOR NO. 1115

[1]Revisions of these definitions of wash-and-wear are being considered in Committee D-13 to broaden their application to include items other than garments.

TI'S LATEST KINK CONTEST WINNER!

Leon Hucks of Sophia, N. C.

For his modification of a C & K filling end remover, Leon F. Hucks, Route No. 1, Sophia, N. C., won the kink contest that ended December 15, 1958. He was paid the $100 prize money plus the sum his article brought at current space rates. For details on the current contest that ends April 15, see the box on page 130.

Duties of the electrical trouble shooter

THE EDITORS:

To get the job properly done, and the machine back into production as quickly as possible, is the task of the trouble shooter. My particular work is all done from an electric shop with a huge supply room; this is not only my headquarters but is that of the whole electrical department's as well.

Trouble calls come to the shop from all the various divisions of a large manufacturing company. If I'm in the shop when a call comes, I talk to the caller myself and try to get from him all pertinent information. I prefer to take calls personally, for the information I can gather usually saves me an extra trip back from the source of trouble to the supply room to get parts and equipment. If I have a reasonable idea of what may be wrong, I can take all the necessary wire cable, meters and tools with me on the first trip to the job.

On arrival I question the machine operator extensively about the trouble. From what he can tell me the nature of the trouble usually becomes clear, and I am able to locate the exact point of break-down right away.

It should be understood that there is much more to trouble shooting than simply repairing a machine motor that is faulty, that smokes, or will not function as smoothly as it should. Sometimes short circuits can be troublesome to locate, and even a blown fuse will not sometimes be obvious immediately. Once in a while the genuine source of trouble is some distance away from the place it affects, or a break-down in one department shuts down operation of a machine in another department.

The trouble shooter must also always be on the lookout for things to do to prevent further trouble. In this field a repair in time saves dollars all along the way; anticipation of trouble is important, for it saves both money and time for the company and workers.

For instance, in a particular d-c generator on which I had been working I observed a lot of armature arcings. Naturally there are several things that could cause this, but most arcings are caused by worn brushes that usually can be changed in a very few minutes.

If these brushes had not been replaced by new ones it is very possible that the generator would run until the armature was badly worn down, even turned out of round or become pitted. Had this been allowed to occur the armature would have had to be taken out, carried to the machine shop, turned and under cut, and would require a minimum of four to six hours. This is a case where a little alertness saved a great deal of valuable production time.

Being a trouble shooter is not measured so much by how much hard work one does, but by how much machinery one can keep in production. Like an expert juggler the good trouble shooter must be able to keep a lot of objects going all the time. When one job is completed, he has to return at once to his headquarters, for, like the fireman, he has to be constantly on duty, ready to get out at once on the next call that comes in.

CONTRIBUTOR NO. 1090

How a fixer "saved" his knees

THE EDITORS:

One of our fixers became tired of squatting, kneeling, etc., about our knitting machines and made knee pads, complete with casters, to free him of the raw knees and muscular cramps brought on by the uncomfortable positions he had to assume to reach some parts of the machines.

He made the pads by cutting 10" squares from ¾" plywood and covering them with foam rubber. To confine the rubber he cut pieces of canvas large enough to cover them and to fold under the edges. With the canvas tucked under the pads, he cemented the package to the wood and, as a security measure he tacked them around their edges. After screwing some light casters to the bottoms of the pads he was "ready to ride."

CONTRIBUTOR NO. 1056

KINK CONTEST!

$100 will be awarded the winner

Send your entry now! This contest ends April 15, 1959

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are judged.

The contest rules are simple:

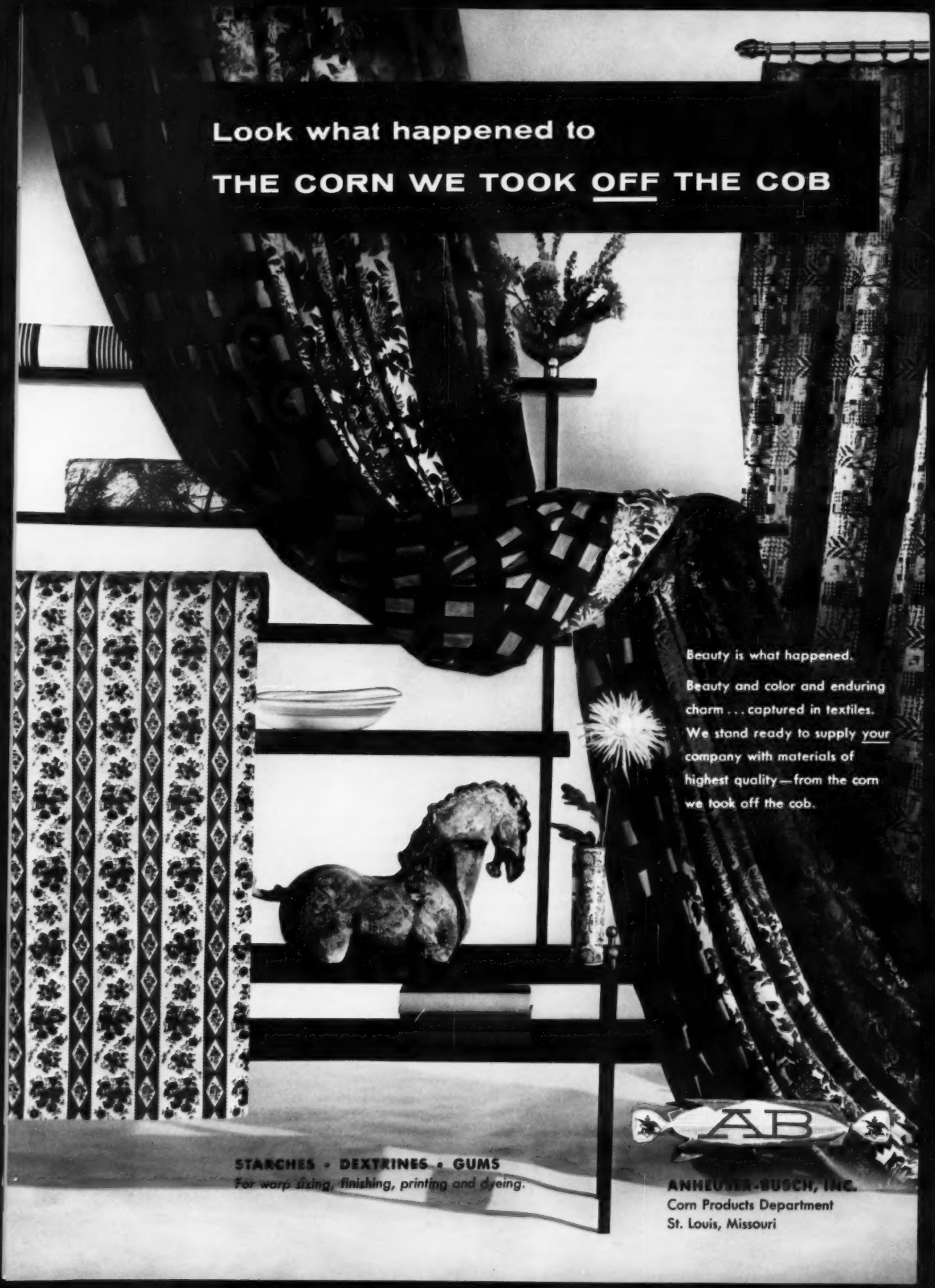
► All contributions must be postmarked not later than midnight, April 15, 1959.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Georgia.


Look what happened to
THE CORN WE TOOK OFF THE COB
Beauty is what happened.
Beauty and color and enduring charm . . . captured in textiles. We stand ready to supply your company with materials of highest quality—from the corn we took off the cob.
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STARCHES • DEXTRINES • GUMS
For warp sizing, finishing, printing and dyeing.
ANHEUSER-BUSCH, INC.
Corn Products Department
St. Louis, Missouri

Ways to increase yarn packing production

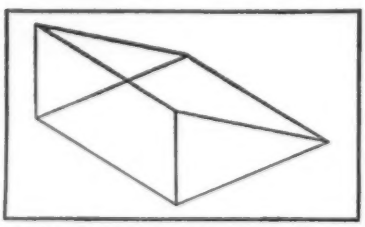
THE EDITORS:

Increased productivity is achieved by major schemes involving new plants or improved layouts of machinery. Very often neither of these expensive steps can be considered and hence the mill manager is presented with a real challenge of how to increase his mill or department's efficiency without spending much money—on a shoestring in fact.

Three very simple steps which have considerably increased the operation efficiency and comfort in the packing section of a yarn winding mill are described below.

The first merely consists of pairs of 3" x 3" lengths of timber upon which cases and skips of yarns are placed when being emptied or filled. The wood blocks raise the case bottom and thus reduce the extent of the bend required. Equally important they enable the worker's toes to go underneath and thus bring his whole body nearer to the job. The lengths are loose and can be very easily moved to the spot required. Besides assisting the packing operation they considerably ease the movement of the empty or full case onto the truck.

A tilted case is often much easier to empty or fill than one on the level even when raised on blocks. A simple frame, made from lengths of angle iron, similar to the one sketched here, is of great value in



Schematic drawing of box-tilting frame.

enabling a wide variety of angles of tilt to be used in a department handling large numbers of small yarn packages in cases or skips. Being easily moved and adjusted they are brought into service when required and are readily stacked away when not in use.

Wheeled box trucks are a common container into which wound yarn is doffed. Where the alleys are narrow the trucks used are frequently fairly tall so that a whole doffing of 60 or 100 large cheeses or cones can be accommodated. Reaching to the bottom of these is very difficult, and we have found two simple solutions which are helping considerably.

The first is to get the mechanic or carpenter to hinge one side so that it can be dropped when the truck is half empty. An alternative to hinging which can be employed when the design of the truck permits is to split the side and arrange the top half to slide down.

We are now experimenting with automatically adjusting false bottoms in the trucks using the springs from old drawing frame coiler cans to support a loose-fitting, movable floor within the truck. By choosing the appropriate type and number of these springs the false bottom is about half way up the box when half the load is in it. As more packages are added the floor is pressed down. The compressed springs reduce somewhat the capacity of the truck but this may not be important. As the truck is unloaded the springs raise the floor and thus the operative is always working at a comfortable height.

These three simple changes combined with a suitable incentive bonus have enabled two packers to comfortably do the work of three. They earn more and are less tired, while the departmental costs are reduced.

CONTRIBUTOR NO. 1099
(England)

Metallic clothing on woolen cards?

THE EDITORS:

I have recently read with interest the short article on metallic clothing in your issue of January, 1953, p. 81.

I am interested in trying out metallic clothing for woolen carding on normal English-type machines, and I should be most obliged if you could indicate where I could obtain further information on this matter, as so far I have not been able to trace any information on the actual use of metallic clothing except for the breast part of a carding machine.

CONTRIBUTOR NO. 1112

(To serve this Scotch reader more quickly, the editors submitted his question to several mill men and suppliers. In the next column is the experience of one of them. Other comments are invited.)

THE EDITORS:

. . . From experience we have had in the past, we have not found metallic wire to be altogether practical when applied to a woolen card. This is chiefly due to the amount of emulsion a woolen mill ordinarily uses first of all to preserve staple as much as possible, and this emulsion results in a congealed greasing over the metallic wire. When this coating of grease occurs, it is rather difficult for the mill to clean the cylinders and doffers as readily as they can clean cards with a conventional card clothing.

Several woolen mills have used this type of wire but have discontinued it after several months of service.

A MACHINE BUILDER

Polyvinyl chloride carpet backing

THE EDITORS:

We read with considerable interest the article (T.I. for January, 1958, p. 82) entitled "Tufteds in England" by P. Abbenheim. The use of polyvinyl chloride (PVC) for backing of Harduraloop is mentioned in the article, but it is not

clear that the PVC is used in sheeting form as a substitute for jute backing or whether it is applied as a back coating.

CONTRIBUTOR No. 1103

(This question was submitted to the author of this article. His reply follows—The Editors)

The carpet in question was not tufted with a backing of PVC sheeting, but the PVC was used merely as a locking system instead of the more conventional natural or synthetic latex compounds. The disadvantage of film, as I see it, would inevitably be the low nick resistance. Once a big needle carrying an end of ls yarn penetrated such a film there would be serious danger of the sheet tearing across before the carpet could reach a marketable state.

PVC is not, I would stress, widely favored as a backing for tufted carpets, but there are one or two firms who feel it has something special to offer, and a firm that was burned down a few months back has just started a series of advertisements proudly announcing that soon they will be once again able to offer their customers carpets with PVC backing.

P. ABBENHEIM

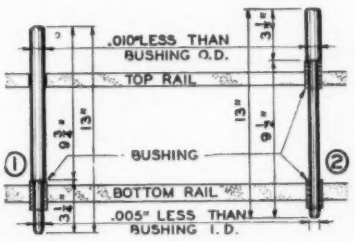
Tools for replacing lifter rod bushings

THE EDITORS:

We had to change lifter rod bushings on 60 spinning frames and do a good aligning job while at it. We had to find a simple and economical way, and we found the answer in the form of two punches described in detail on the accompanying illustration.

The first punch is used to fit the bottom rail bushing. It is 13" long and is turned to a diameter 0.010" less than the outside diameter of the top bushing. Along 3¼" of one end of it we turned it to a new diameter 0.005" less than the inside diameter of the bottom bushing. This enabled us to line up the bottom bushing with the hole for the top one.

The second punch was also 13" long but it differed from the first in that 9½" of it were turned 0.005" less than the inside diameter of the bottom bushing. The balance of its



length we turned 0.010" less than the outside diameter of the top bushing. The shoulders allowed the fixers to remove the old bushings speedily as well as to insert the new ones.

CONTRIBUTOR No. 1114

(Canada)

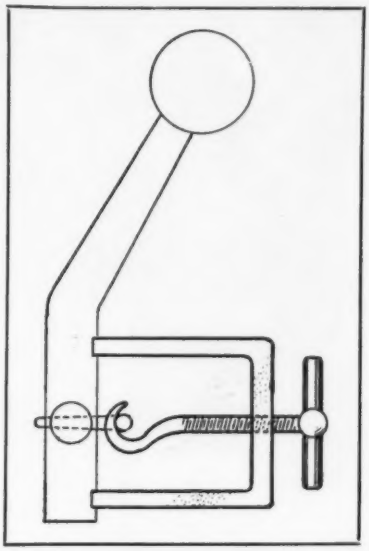
Speeds removal of spinning motor pins

THE EDITORS:

In our M. 1 ring spinning frame motors the motor handles have been secured with a tapered pin. Whenever the handle has to be taken out it presents quite a lengthy and laborious task as the pin usually gets jammed in place.

We originally used tapered punches to remove the pin, but in our case we have made special covers for the motor speed regulating screw so that the screw is beyond the reach of the operative or any unauthorized person. The cover is put into position only after the motor handle is removed. Sometimes the pin breaks as it is being removed and causes considerable downtime.

We simplified the pin removal by means of a small jack (see illustration) to fit a redesigned motor pin. The new pins have a small head over which the forked end of the puller is placed. The threaded



puller is turned inside its frame, and as it backs out it brings the pin with it.

CONTRIBUTOR No. 1089

(India)

Extra wrap makes denser roving packages

THE EDITORS:

On the old models of our 9" x 4½" slubber with the Interdraft system the writer has increased the running time about 40 minutes per doff on 3.00 hank roving.

This increase in running time, and the additional 4-oz increase per bobbin, have been accomplished by adding one wrap on the finger presser to make a firmer package. This extra wrap has the same effect on the package firmness as the drop finger pressers have.

This firmness of the slubber bobbin does not harm the spinning qualities. At the slubber the running qualities are improved. Also, the more firmly packed bobbin at the slubbers reduces the number of tangled roving packages that must be knocked off or cut off and returned to the waste machine for another trip back through the carding process.

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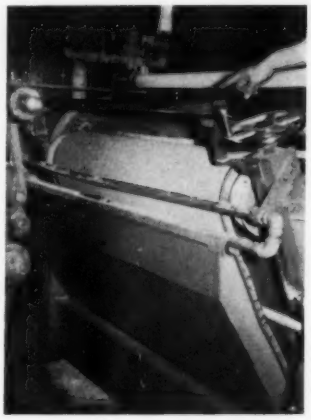
Bar improves compressive shrinker

The installation of a solid metal bar approximately two inches in diameter serves the purpose of supporting the weight of the cloth being run on a rubber-blanket-equipped compressive shrinking machine at North Carolina Finishing Co. The supporting bar helped obtain better shrinkage, thereby assuring fewer re-runs.

The cloth is now fed into the machine without any tension whatever; whereas, difficulty was formerly encountered in correct feeding and was attributable to the weight of the cloth itself. When proper tension was not maintained on the in-feed, the second run was frequently necessary. Re-runs have been eliminated by installation of the simple bar arrangement which was suggested by Marvin Trexler of the compressive shrinking department.



be sure to polish the finger of the presser with crocus cloth. Mills will probably have the desired smoothness where the two wraps have already been running, but the place where the extra wrap will run will probably be dull—rusty. The whole finger must be polished to keep from having trouble with the end lagging back. Mills will, as in my case, have to change the tension gear in order to reregulate the ends, and it may be advisable to change the bottom cone gear. This must be left up to the man in charge to decide for himself which is best for his particular job. In another case the taper may have to be changed. In my case it is paying off in more efficiency and production.

CONTRIBUTOR No. 1095

Tool aligns knitting machine pawls

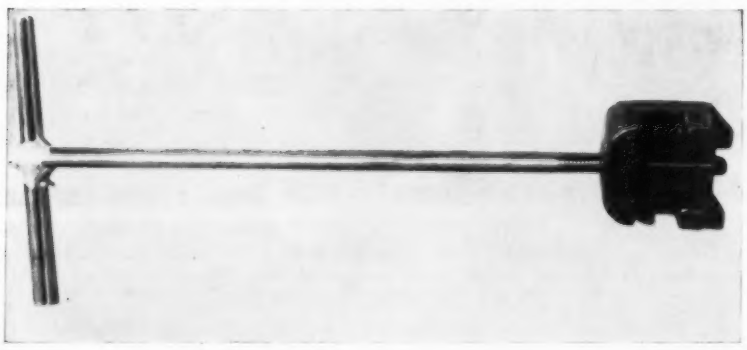
THE EDITORS:

The chain pawl on Banner wrap and reverse, and solid color pattern machines can be aligned with a simple tool without taking the pawl from the machine. These pawls are secured with a bolt and nut arrangement but removal is slow and usually very greasy for the fixer, thereby making the operation distasteful as well as time-consuming.

The simple tool shown in the illustration may be used to align the pawls by bending them while on the machines. This method of setting the pawls is more accurate than the method requiring removal because alignment is made directly onto the ratchet wheel. Also, less time is consumed, and the job is not nearly so dirty for the fixer.

Another use for this tool is for the alignment or bending of push and/or pull rods and various other levers on the knitting machine.

CONTRIBUTOR No. 1098



Paper tubes now fit winder skewers

THE EDITORS:

When changing from a wooden spinning bobbin to a paper tube, we found that the skewers on our Foster winders were too small. We solved this problem by sawing off old wooden twister bobbins and fitting a coarse-thread set screw into the bottoms of them. After we fitted these on our winder skewers, our paper tubes fit perfectly.

CONTRIBUTOR No. 1036

Oops!

In the January issue we forgot to give credit to Cecil Wooten of Clinton (S. C.) Cotton Mills who made the safety catches that enable the fixers to lock out the shipper handles of Model E looms.

Cuts his clerical cost $7000 yearly

THE EDITORS:

In one of our large group of mills it was established that the full-time effort of three clerks was being devoted to the handling and filing of correspondence, shipping papers, and other documents associated with an order.

A careful check was maintained to determine if these functions served some useful purpose. Consideration was also given to the possible disasters which could occur if they were abandoned.

A close checkup of two months' activity before taking any action produced only a handful of inquiries concerning the vast volume of paperwork filed.

So it was decided to adopt the practice of destroying all correspondence, shipping papers, and other documents associated with an order as soon as shipment to the customer had been made.

Quite evidently this practice subjected the company to a certain risk which it did not face when it had retained these records. But a careful study, conducted over a considerable period of time following the action taken, revealed that the cost of filing, storing, and searching through this tremendous volume of documents was greater than that of duplicating at company expense any order which the customer claimed not to have received.

Furthermore, the original register was preserved on which was recorded the customer's name, order number, and date received and the assigning of a company order number together with date of shipment and invoice number. The invoice itself carried the complete evidence and a storehouse of information, thus proving that the basic and final recording data were sufficient to throw the spotlight on the effectiveness of the end results. And now this particular filing section exists no more.

In labor costs three clerks at $45 per week represent a total savings of $7,020 per year. In addition there was eliminated filing equipment valued at $2,500 which has since been reallocated to other departments of the mill.

CONTRIBUTOR No. 1086

Box motion stand improvement—Jig for repairing shuttle boxes

J. Reece Craven, loom fixer at Revolution Plant, Cone Mills Corp., Greensboro, N. C., won a cash award from the company for his suggestion to place a case-hardened bushing in the hole where the steel ball works in the box motion stand to help eliminate failure.

The hole where the steel ball works in the box motion stand wears larger and causes loom failure, according to Mr. Craven. In the past, the box motion stands were discarded as they became worn. The suggestion entailed tooling out the hole and placing a case-hardened bushing within, thereby making the part better than new.

Upon repairing and checking these parts since April 2, 1957, 26 parts have been renewed, and it costs $1.50 to $3.00 to repair one compared to the average cost of $20.44 for a new one. It has not been necessary to purchase a new one since April, 1957.

Mr. Craven also suggested that a jig be built to repair broken shuttle boxes. Such repair calls for precision work, especially on the lifter rod collar which has to be welded in an exact position and reinforced while welding is performed.

Formerly, the boxes were discarded because they were difficult to repair for re-use. In the past year, approximately 35 of these shuttle boxes were repaired instead of buying new ones at a cost of $25.97 each. The supply room has not ordered any new shuttle boxes since the repairs were initiated.

J. Reece Craven, loom fixer at Revolution Plant of Cone Mills Corp., put a case-hardened bushing in the hole where the steel ball works in the box motion stand.

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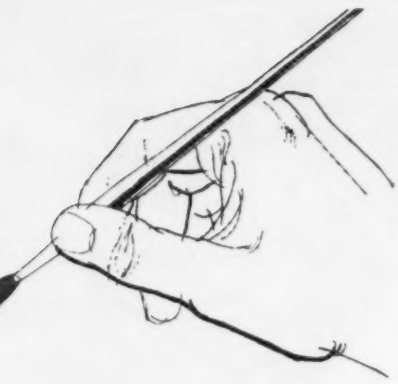

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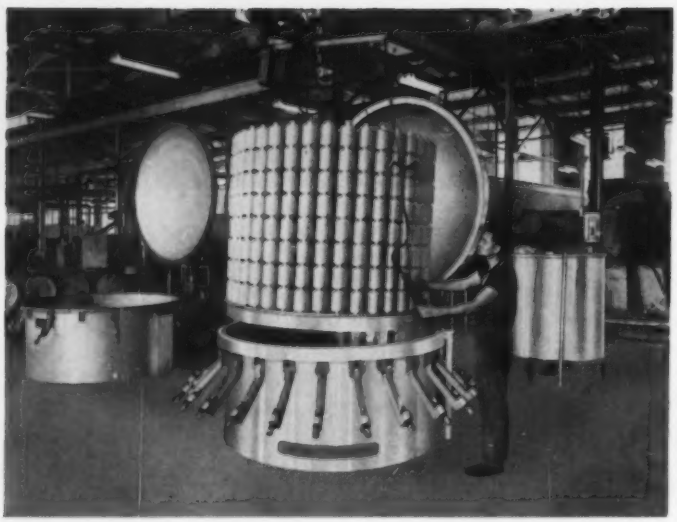

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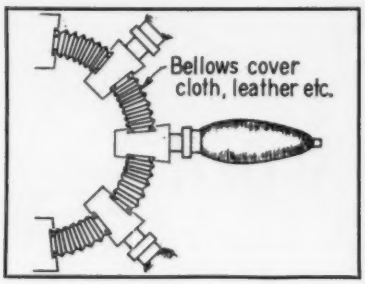

THE EDITORS:

Fires of a mild nature formerly occurred on our A. P. winding machines very frequently as bobbins (shields) and other metallic pieces found their ways onto the bus bars over which the individual spindle motors travel.

By introducing a bellows cover of strong paper, calico cloth, leather, or any other suitable material and fixing the same cover between two spindle motors, as illustrated, the way for empties, bobbin shields, or any other foreign matter to the bus bars is blocked and the accidents reduced. The bellows-type covers are necessary so they will extend and remain over the bus bars when the spindle motors reach the head stock or the off end of the machine. The covers are easily installed and removed.

CONTRIBUTOR No. 1088
(India)

Effect of stainless oil on strength of white nylon thread

THE EDITORS:

A research problem sometime ago was to ascertain the effect of stainless oil on the strength and elongation of size "A" white nylon thread. There had been some question of the possibility of a reduction in sewing efficiency due to the effect of oil that might get on the thread during high speed sewing.

The strength tests were made on a regulation single-end tensile strength machine. Results, along with the percentage of elongation are shown in Table I.

The material used for the strength tests was taken from one large skein so the test results would be representative of all the conditions that affected the one skein only. A sample for each of the several tests was reeled in succession from this skein. The first reeling was tested dry.

The second skein was immersed in oil momentarily and the surplus oil then squeezed out between lightly adjusted squeeze rolls. The latter procedure was carried out also with the third and fourth skeins.

The third skein was immersed in oil for a ten minute interval. The fourth skein was made twice the size of the other skeins. It was dipped for a moment in the oil, then after light squeeze-rolling, hung up in the standard atmosphere of the laboratory for two and one-half hours. It was then tested and left for further conditioning to a total of 25 hours, and tested.

The results of all testings are shown in Table I. Five tests were made in each instance, the percentage of elongation as well as strength being noted.

An analysis of the results is interesting. Like the effect of water on the strength of cotton, the oil improved the strength of the nylon thread—certainly not a great deal, but at least it allayed any fears that the material would be weakened should it become impregnated with oil.

Although it was realized that the number of test was quite small the results were sufficient to show the trend. There was practically no change in the elongation of the nylon.

CONTRIBUTOR No. 1106

TABLE I

Effect of Stainless Oil on Tensile Strength and Elongation of White Nylon Thread, Size A

	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Average	
Test*	Str. (lb)	Elong. (%)	Str. (lb)	Elong. (%)	Str. (lb)	Elong. (%)	Str. (lb)	Elong. (%)	Str. (lb)	Elong. (%)	Str. (lb)	Elong. (%)
1	2.7	17	2.7	17	2.7	16	2.8	17	2.7	16	2.72	17
2	2.8	17	2.8	16	2.8	17	2.6	15	2.8	18	2.76	17
3	2.8	15	2.8	16	2.8	17	2.8	17	2.8	17	2.80	16
4	2.8	17	2.8	17	2.8	16	2.8	16	2.7	15	2.78	16
5	2.8	17	2.8	16	2.8	16	2.8	17	2.8	17	2.80	17
									Grand Average		**2.78**	**17**

* Test conditions are listed below by test number.

1 Dry yarn
2 Wet with oil
3 Soaked in oil 10 minutes
4 Oiled and exposed to laboratory atmosphere 2.5 hours
5 Same skein as Test 4 but exposed to laboratory atmosphere 25 hours

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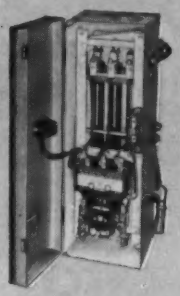
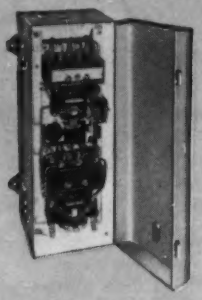
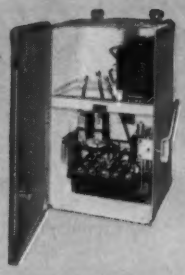


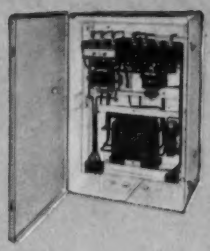
Bulletin 640. Manual stepless resistance starting of polyphase induction motors. Velvet smooth acceleration is under the control of the operator.



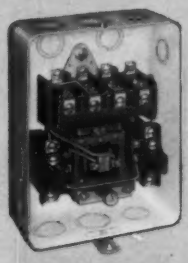
Bulletin 740. Automatic velvet smooth resistance starting. Resistors and starting period adjustable exactly to load conditions.



Bulletin 646. Manual autotransformer starter with "modern" air break, silver alloy contacts. Also made with oil-immersed contacts.

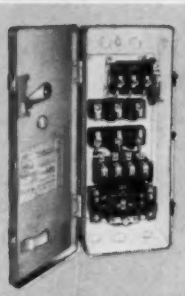


Bulletin 746. Automatic autotransformer reduced voltage starters for induction motors. Taps permit voltage adjustment.

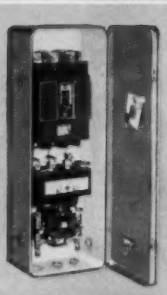


Bulletin 709. Automatic across-the-line starter. Solenoid design with only ONE moving part assures long, trouble free life. Overload relays remain dependable.

Bulletin 1209. Loom motor starting switch with toggle action. Enclosure built to exclude lint. The switch lever cannot be operated by being "kicked."



Bulletin 712. Combination starter with disconnect switch in one cabinet. Cabinet cannot be opened while starter is "hot." Supplied with fuse clips—and without.



Bulletin 713. Combination starter with instantaneous adjustable I.T.E. circuit breaker. Same safety features as Bulletin 712. Breaker provides short circuit protection.

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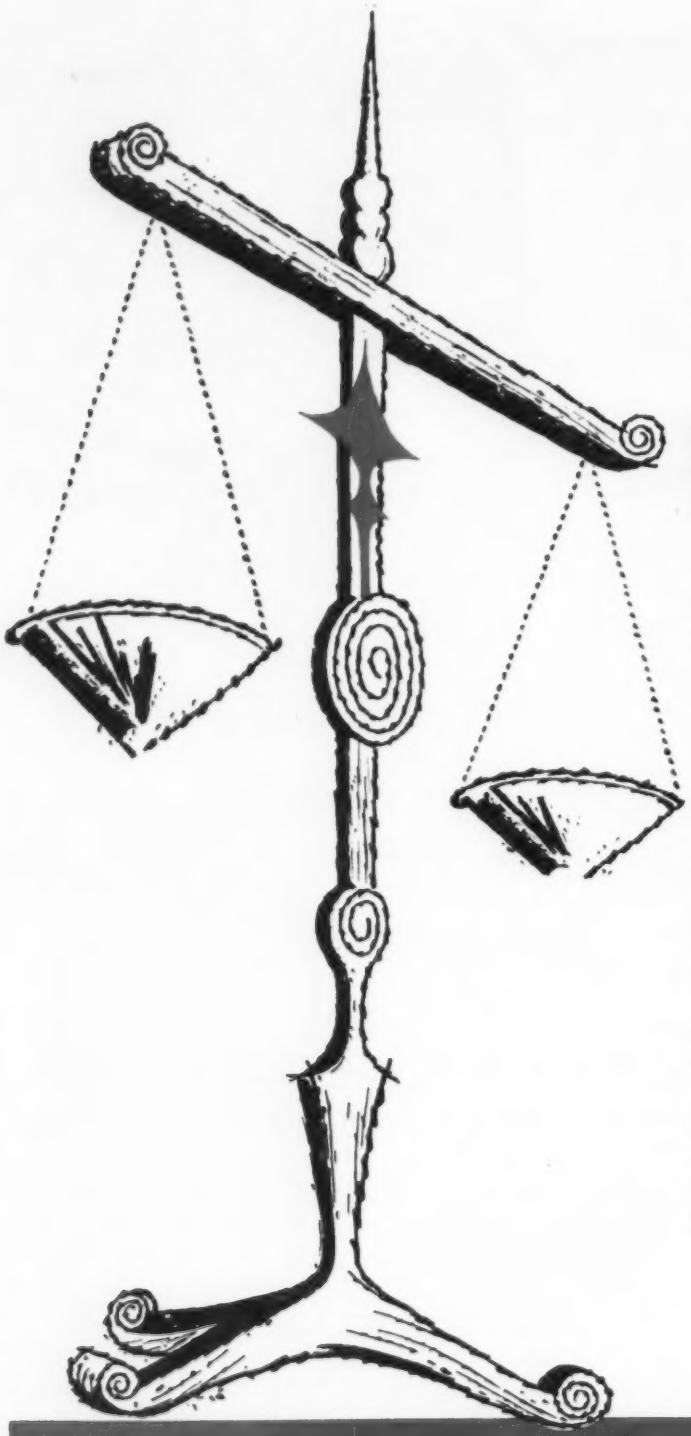

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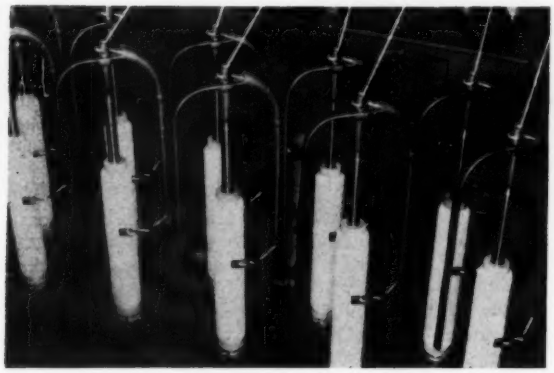
Machines and Equipment . . . Supplies and Services . . . Dyes and Chemicals . . . Books

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors.



Flyers stay clean inside and out

With the Whitin "Neva-Pik" flyers roving frame downtime for cleaning is greatly reduced and lint accumulation inside the hollow leg is eliminated.

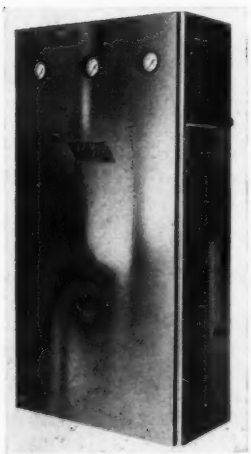
During the breaking-in period the flyers require picking approximately once or twice during the first week. Then it is possible to considerably increase the cleaning interval which, of course, will depend on individual mill conditions.

This equipment manufacturer also will recondition flyers now in use in the mill to provide the same improved operating characteristics.

Whitin Machine Works, Whitinsville, Mass.

Do you want more data? Write ◂ or use card on page 163; list C-101

Cooker eliminates variation of size viscosity



Pictured here is the latest model of the Nemo Jet Cooker, which eliminates the necessity for cooking of size in large batches and the resultant variation in viscosity and film-forming properties. Less steam required and reduction of stream pollution are other advantages provided by this machine, the exclusive manufacturing and sales rights of which have been acquired from Nemo Industries, Inc., by Cocker Machine & Foundry Co.

The cold size mix is prepared in the usual way and piped to the cooker where only the amount of size needed is cooked instantly. This eliminates dumping of unused cooked size, lumps and hard size, and the need for controls for cooking and storage kettles.

Cocker Machine & Foundry Co., Gastonia, N. C.

Do you want more data? Write ◂ or use card on page 163; list C-102

Imparts natural feel to wash-wear fabrics

A new finish minimizes the harsh and often disagreeable surface feel that wash-wear resins tend to give fabrics. Called Lanolized-WW, it has excellent durability and is applicable to cottons, synthetics, and blends. It will not scorch at elevated temperatures, offers increased tear and soil resistance, will not retain chlorine, and reduces needle cutting. It requires no curing and may be applied in conventional ways. Stable in storage, it is compatible with resins, catalysts, and auxiliary agents used in textile finishing.

The finish is being licensed by Lanolized, Inc., of New York City, under its patents, patents pending, and trade marks. All licenses are for quality control purposes and are being offered in the fields of apparel and domestic fabrics.

Scholler Brothers, Inc., Collins and Westmoreland Sts., Philadelphia 34, Pa.

Do you want more data? Write ◂ or use card on page 163; list C-103

170" tricot knitter is quiet at 950 courses/min

The 170"-wide "Excentra" tricot knitting machine makes jersey fabrics at a sustained speed of 950 stitches per minute. Permitting unlimited pattern possibilities with the entire range of yarns used for tricot knitting, this machine also features the following:

1. Quiet operation—vibration-free, single-unit welded steel frame, completely distortion-free.
2. Knitting motion actuated by eccentrics and crank levers.
3. Knitting elements externally adjustable.
4. Positive cloth take-up.
5. Automatic power-driven let-off with indicator lamps for accurate yarn control. Tuck stitch control device is supplied on request.

(Continued next page)

TON-TEX Ve-E-zy
SEGMATIC V-BELTING

Mile after mile of Ve-E-zy speeds production in industry on V-Belt drives. Made of segments punched from Ton-Tex Belting stock, and coupled with special clamping bolts and nuts.

- Reduces inventory
- Adjustable to any length
- Provides "off-the-spool" service
- Easily and quickly installed
- Delivers maximum power

A, B, C and D Sections — Fits all standard sheaves — 50 and 100 foot spools, in regular and Oil-Ex (oil and heat resistant) construction.

Time tested for 20 years.

Write For Complete Literature

TON-TEX CORPORATION
31 Columbus Ave., Englewood, New Jersey
GREENSBORO, N. C. 1910 E. Wendover Ave.
BOSTON, MASS. 51 Sleeper St.
Serving Industry Over a Quarter Century

got a
SPRAY NOZZLE
problem?

perhaps one of our DATA SHEETS can suggest a solution

For almost every spraying application, there's a Spraying Systems Data Sheet that gives useful information on suggested installations and types of nozzles to use. If you have a problem, write and let us know the application involved . . . and we'll send the Data Sheet that applies.

SPRAYING SYSTEMS CO.
3272 RANDOLPH STREET • BELLWOOD, ILLINOIS

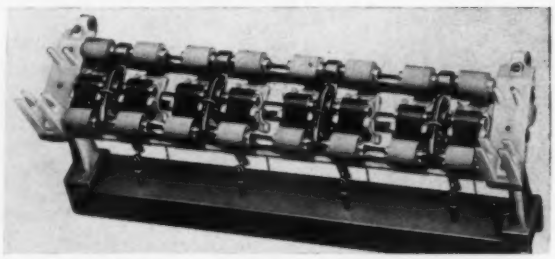
And . . . for complete spray nozzle information, write for Catalog 24.

5. Automatic lubrication; simplified maintenance.
6. Chain link or pattern wheel drive.

Robert Reiner, Inc., 550-564 Gregory Ave., Weehawken, N. J.

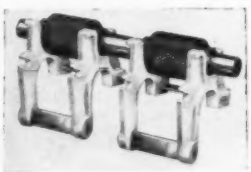
Do you want more data? Write or use card on page 163; list C-104

Completely antifriction drafting system



A completely antifriction spinning drafting system uses molded Nyprolon cradles and antifriction top rolls. Adaptable to all existing frames, it never requires adjustments, even following top front roll buffing. The lack of oil assists in maintaining the system's cleanliness. Other advantages: no cap bars; positive alignment, positive settings; suspension arm is an integral part of the front roll; a choice of three positive weight settings; pressure on front and middle rolls is constant and uniform; front rolls withstand heavy weighting; easy to dismantle and reassemble; simplicity of design; and it is easy on aprons and cots.

The pivot position of the suspension arm ensures precise setting of the front roll at all times. The ball and socket assembly of the suspension arm and back saddle ensure even weight distribution and roll self-alignment. The back saddle locks onto center spacers of the middle and back rolls to compel alignment. The suspension arm has a steel core insert to add strength, eliminate static, and to provide fixed points for positive weighting.



Some of the benefits to be derived from the molded Nyprolon cradles, which are also available as separate units for use with existing drafting systems, are: no bottom roll neck wear; no lubrication required and consequently no soiled aprons or yarn; no wear on knurled top roll gudgeons; snap-on lock action on bottom fluted rolls that ensures apron alignment; wide bearing surface not affected by worn existing necks; interchangeability with present steel cradles.

Progressive Engineering, Inc., 241 West Water St., Rockland, Mass.

Do you want more data? Write or use card on page 163; list C-105

Checks seamless hose size at knitter

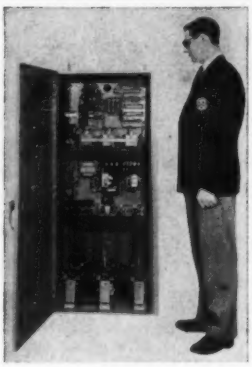
Toe length, foot size, leg length, and welt dimensions of seamless stockings are measured on the Volumet in one rapid operation. The portable unit is equipped with a built-in toe fabric and locking device for testing unlooped stockings right at the knitting machine. In 30 minutes an operator can test and record the results of stockings taken from 34 machines and adjust as many as 10 knitting

machines at the same time, if necessary. Every foot size from 8 to 12 is precisely measured from heel gore to toe tip. And, due to the toe telescoping feature, a variation in foot size does not affect the volumetric measurement of leg length. Stockings may be measured either in the grey or finished state.

Joseph C. Cobert Associates, 90 Glendale Ave., Concord, N. C.

Do you want more data? Write ◂ or use card on page 163; list C-106

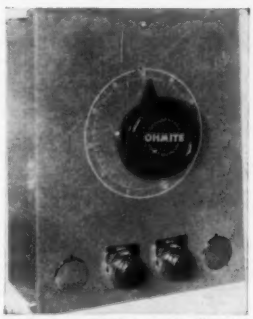
Reliable package drive for slashers, warpers



The Westinghouse Reactifier Drive for slashers, warpers, and similar machines incorporates the latest developments in static control and rectifiers to provide a new standard in reliability and low maintenance for adjustable voltage package drives.

Designated the Type AVR Reactifier Drive, it offers the complete flexibiilty of a d-c adjustable voltage control system with the new feature of "Magamp" regulated silicon rectifier d-c power supply. The "Magamp" provides regulated d-c voltage with IR drop compensation for the new rerate Lifeline "H" d-c drive motor. Current limit acceleration control is a standard feature.

The drive provides an 8 to 1 constant torque speed range by adjustable voltage control. An optional constant hp speed range by motor field control is available. The range of standard horsepower is 1 to 200; larger ratings can be furnished.



The complete power and control unit is furnished in a floor mounted NEMA 1 control enclosure. Forced ventilation with filtered air provides a positive pressure ventilating system and permits the greatest saving in space and weight.

Westinghouse Electric Corp., Systems Control Dept., Buffalo 5, N. Y.

Do you want more data? Write ◂ or use card on page 163; list C-107

Instruments for quality control in web forming

An assembly of instruments along with an anti-static fluid feeding system may be applied to Curlator random-web-forming equipment.

Fundamental reasons for so equipping these machines are:

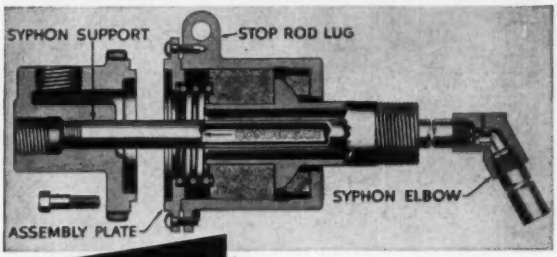
1. To gain knowledge and control data of certain machine and operating variables which from experience affect fiber processing and the quality of the product web.

2. To provide means whereby product development can be carried on in a rational manner for the reason that the important variables may be controlled as from run to run, fiber to fiber, day to day, or month to month.

3. To provide daily records. This is particularly im-

TRY THIS on your Dry Cans and 30″ Slasher Cylinders

We'll gladly furnish a pair of these units for 90-day obligation-free trial in your mill. The Type SB2P is self-supporting, completely packless, needs no lubrication or adjustment. The Johnson Syphon Elbow permits the use of two straight pipes instead of an unwieldy curved syphon pipe, is hinged to pass right through the joint.

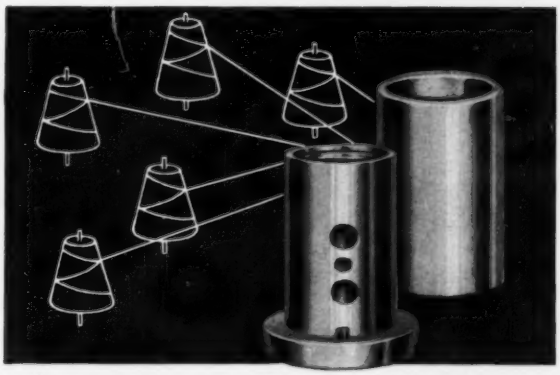


Johnson ROTARY PRESSURE Joints
First in the Textile Industry

Write for Catalog S-3002

Shows self-supporting Johnson Joints for all needs . . . on print cans, calenders, compressive shrinkage ranges, big 5′ and 7′ cotton slashers, dry cans, etc.

THE JOHNSON CORPORATION
815 Wood St., Three Rivers, Mich.



Johnson Bronze offers quick delivery on a full line of high quality Textile Replacement Bearings

Johnson Bronze can deliver a large variety of textile machinery replacement bearings from stock. These special bearings are made to the same specifications as the originals which they replace, and will give the same satisfactory service.

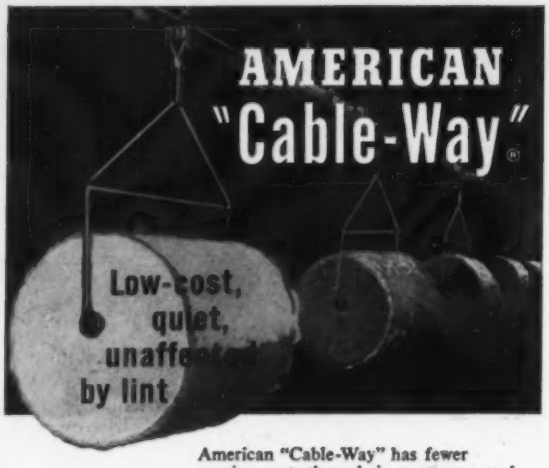
The fast Johnson service on bearings for all types of textile machinery, and the high quality of their products make Johnson Bronze your best source for replacement bearings. Write for free literature, requesting Folder JBL-9. Johnson Bronze, 530 S. Mill St., New Castle, Pa.

JOHNSON Bearings

Johnson Textile Bearings

Subsidiary: Apex Bronze Foundry Co., Oakland, Cal.

NEW PRODUCT PARADE



"Cable-Way" Conveyors reduce costs, transport laps overhead.

American "Cable-Way" has fewer moving parts than chain conveyors, and thus fewer wear points. It is easy to clean and service. Due to lightweight track, trolleys and cable, the existing roof structure is usually adequate to support the conveyor and its load. All-bolted construction makes installation quick and easy. Extensions to systems also can be made readily. Many large textile plants use "Cable-Way" conveyors. Write for Catalog CDA.

CONVEYOR DIVISION
THE AMERICAN MONORAIL CO.
Fourth & Franklin Streets • Tipp City 24, Ohio

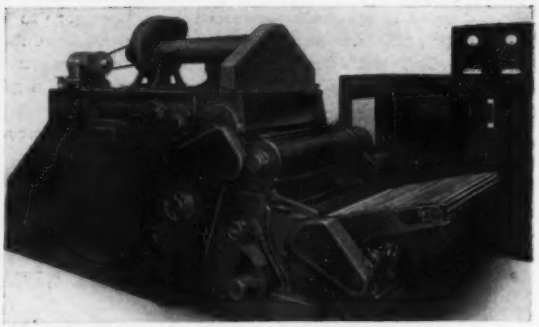
WORLD'S MOST MODERN SPOOL PLANT

AKRON Spools are fantastically accurate

One reason — AKRON Spools are balanced under yarn load . . . not empty.

We have 13 years of success in solving spool problems of leading mills and manufacturers. Let us help you!

AKRON SPOOL
AND MANUFACTURING CO.
HIGH POINT, NORTH CAROLINA



Instruments for controlling the quality of the web produced on the machine in the foreground are mounted on the panel at the extreme right.

portant in the mill when one considers the versatility of these machines and their ability to process a wide variety of fibers, weights, and products simply by control manipulation of the machines. For instance, a user may wish to rotate his production from product to product at intervals, thus avoiding long runs and inventory accumulation. With instruments and records, it follows that alternate production runs can be set up quickly to the previously accumulated operating data.

4. Instrumentation at both the supplier or mill laboratory and the mill production line can provide greater accuracy and efficiency in correlating product development and production procedures.

Instrumentation offered includes:

1. A mechanical type of pressure gauge for indicating the suction pressure in inches of water across the feeder air bridge and condenser combination. This gauge functions in respect to feed mat formation prior to entering the web maker.

2. A three-way mechanical type of gauge to indicate suction, positive pressure, and differential pressure in inches of water. The purpose is to indicate the zone pressures ahead of the licker-in and subsequent to the condenser and, particularly, the differential pressure across the fiber carrying and forming zone of the web maker.

3. An electrical type tachometer for indicating the licker-in speed.

4. An electrical type tachometer to indicate the flow rate of the product web as it is removed from the conveyor.

5. Instrumentation for indicating the dry bulb temperature, dew point temperature, and the relative humidity of the recirculating air stream; also a flow rate meter for measuring the quantity of water fed to the humidifier.

6. An anti-static fluid feed and atomizing system for preconditioning the fiber while it is in the feeder hopper.

Curlator Corp., 501 W. Commercial St., E. Rochester, N. Y.

Do you want more data? Write ◆ or use card on page 163; list C-108

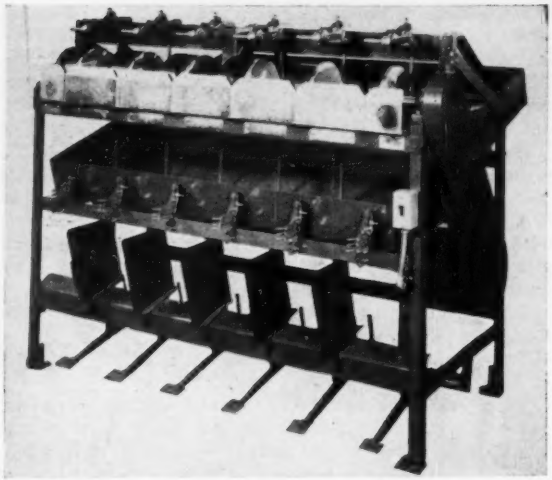
Uptwister spindle has no doffer guard

The Zinser uptwister spindle contains no doffer guard and is equipped with an SKF insert. Oil does not work out of the assembly to cause waste and added cleaning. The spindle, made by Zinser-Testilmaschinen GMBH, West Germany, uses little power, is fitted with an HF oil-damping insert, and incorporates a spring-mounted step bearing to act as a shock guard. The adapters may be of wood or light metal.

Wat-Des Corp., P. O. Box 1954, Charlotte, N. C.

Do you want more data? Write ◆ or use card on page 163; list C-109

Starter maker leaves tail for magazining



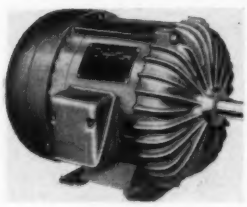
A starter maker is arranged to wind starter layers of yarn onto a core, from a cheese as the supply package, and to make a tail of yarn on the starter to be used in magazining cheeses. This tail is separate and to one side of the main body of the starter and subsequently remains to one side of the full cheese. The machine is adaptable to winding onto wooden or Bakelite or dye sleeves.

The operator picks up the end from the package, lays it into the tension device, gives it a few wraps around the core, then lets the core down onto the winding drum. When enough yarn is wound onto the core, pressure on the foot pedal lifts the starter from the drum and applies a brake. When the end is broken off, part remains held in the tension device and ready for the first wraps on the next core.

Barber-Colman Co., 1300 Rock St., Rockford, Ill.

Do you want more data? Write ◂ or use card on page 163; list C-110

¾ to 5 hp totally-enclosed single-phase motors



A line of single phase motors in totally-enclosed, fan-cooled and Underwriters' approved explosion-proof frames, has been introduced. Available in two-, four-, and six-pole speeds, the motors are built in re-rated NEMA frames 182, 184, 213, and 215.

Condensers and the centrifugal mechanism are completely enclosed within the front end head, providing not only added protection for these parts, but also cleaner over-all appearance for the motor.

The motors are designed for installation in any environment—in damp areas, dusty or corrosive atmospheres, and out-of-doors. Double-width, fully sealed, pre-lubricated ball bearings which retain the lubricant and at the same time seal out dirt and dust are utilized in them.

This manufacturer has also expanded its line of open-protected single phase motors to include ratings to 20 horsepower.

Robbins & Myers, Inc., Motor Division, Springfield, Ohio.

Do you want more data? Write ◂ or use card on page 163; list C-111

Announcing

MOROPOL 762

. . . a DURABLE Non-Ionic Resin Softener

Moropol 762 increases tear strength and abrasion resistance, and adds to the crease angle in resin treated fabrics. These properties are durable for the life of the fabric.

The "hand" imparted by Moropol 762 as a resin softener is silkier than with other durable softeners, and is excellent for fabrics like women's apparel. It does not contribute to the pickup of soil and will not retain soil or dirt during laundering, as do many thermoplastic resin softeners. This feature recommends its use on white goods in preference to acrylate, silicone, and polyethylene softeners.

General Properties

Chemical Nature:	An aqueous non-ionic dispersion of an epoxy type plasticizer.
Appearance:	Creamy white emulsion
Concentration:	40%
pH:	6.0 — 6.5
Compatibility:	Compatible with water phase resin solutions as well as cationic, acid, alkaline, and metal salt additives.
Stability:	Freeze-thaw and storage stable for over 6 months.
Shipped:	In 55 gal. drum containers . . . exact net wt. 440 lbs.

Let us send you technical data on Moropol 762.

MORETEX *Chemical Products,* **INC.**

314 W. Henry St., Spartanburg, S.C.

Manufacturing Chemists

Established 1908

Since 1898
Dary Ring Travelers...
THE DARY RING TRAVELER CO.
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Benninger Eng. Co., Ltd.	Sectional Warper and Beamer
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Your WHITIN SCHWEITER WINDER
+ $357. =
Most Modern Superautomatic High Speed
FILLMASTER
PLEASE WRITE FOR COMPLETE INFORMATION
most versatile winder — excellent for all yarns — tailless bobbins — star wind — high winding speeds

New fibers and yarns

A nonlaminated metalized yarn is available in gold and silver colors and in widths of 1/64" and wider. Made of metalized Mylar in 0.5-mil thickness, and called NL Chromeflex, it is washable by hand, has a good rating for drycleaning with perchlorethylene or Stoddard solvent, and drapes gracefully.

Metal Film Co., Inc., 40 Worth St., New York 13, N. Y.

Do you want more data? Write supplier or use card on page 163; list C-201

A carpet yarn called Heatherloft combines white fibers with Chromespun acetate. The yarn is smooth, free from pits and crevices, and has good resistance to soiling. It is immune to rot, mold, mildew, moths, and silverfish.

Eastman Chemical Products, Inc., Sub. of Eastman Kodak Co., Kingsport, Tenn.

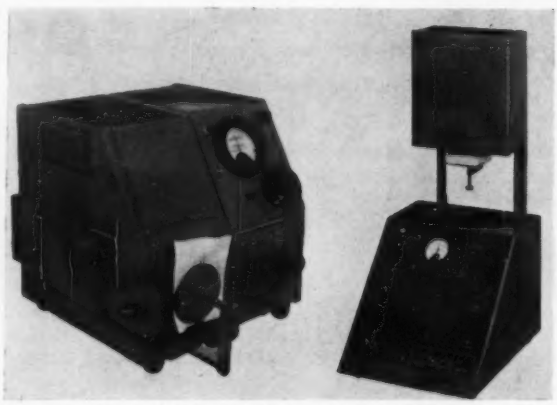
Do you want more data? Write supplier or use card on page 163; list C-202

Warp-wind package for improved quality seamless hosiery. A new type 15-denier monofilament yarn with a modified spinning finish and an exclusive warp-wind build is available. Its advantages include more uniform yarn take-off tension, excellent stocking length control, higher knitting efficiencies, improved quality of finished product, and lower operating costs. The new package is basically a conventional nylon bobbin with a long stroke parallel warp-wind which gradually shortens as the size of the bobbin increases.

The Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

Do you want more data? Write supplier or use card on page 163; list C-203

Instruments aid wet processing



Whiteness Meter (left) and Color and Color-Difference Meter.

A whiteness reflectometer will measure the progress in bleaching both by chemical and optical bleaches. Designed for measuring the whiteness, reflectance, yellowness, and opacity of white and near-white paints, papers, textiles, etc., it can be equipped with an untraviolet absorbing filter that may be alternated between the incident and viewing light beams to measure directly the contribution of fluorescent brighteners to specimen whiteness. It may be used also to evaluate the color quality of textile fibers, especially cotton and wool.

A color meter may be used to group bolts of dyed cloth into lots of identical color. Designed primarily for detecting small color difference found in paint, paper, and

textiles, it gives accurate color measurements, using a ceramic hitching-post color standard. A color difference attachment gives components of color difference between sample and standard and then total color difference using an equation in which weighting factors may be adjusted to conform to visual grading practices for the product under study.

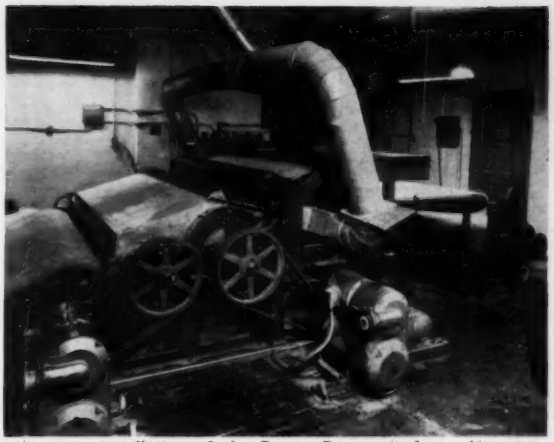
Hunter Associates Laboratory, 5421 Brier Ridge Rd., McLean, Va.

Do you want more data? Write ◂▸ or use card on page 163; list C-112

New equipment for making nonwovens

Two production units are available for use in new or existing nonwoven fabric ranges. For average quality industrial types of nonwoven fabrics a simple machinery arrangement can be used, consisting of a scale pan weighing feed and the Duo Form web forming unit. This equipment will form nonoriented webs of cotton, wool, synthetics, jute, and hair ranging from 2 to 15 denier and in staple length from ½" to 1½". Web width may be up to 84" wide with weights varying from 1 to 15 ounces per square yard.

The weighing feed provides for coarse opening and metering of the fibers. The Duo Form utilizes a high-speed main cylinder with workers and strippers which open the stock to single fibers by carding action and provide leveling and blending. An intermediate high-speed doffer transfers the opened, leveled, and blended stock to the second main cylinder which operates at a very high speed



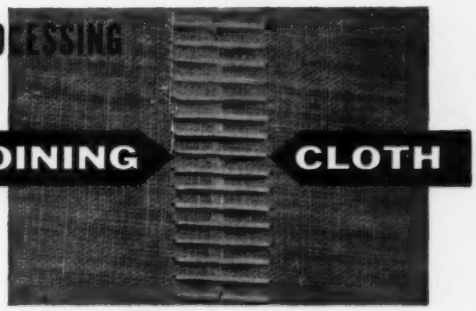
Laboratory installation of the Proctor-Form unit for making nonwovens from short, loose stocks or slippery fibers.

for maximum draft and resultant fiber separation. Fibers are stripped by air and formed into a nonoriented web on a screened cylinder for delivery from an apron. Feeds with a compensator and delivery gates are available for additional accuracy, and, for extreme opening, width eveness, and fiber-to-fiber blending, this unit can be fed from existing batt lines (picker, willow, condenser, feed, garnett, lapper).

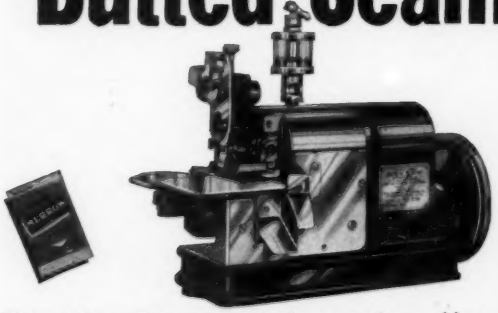
The second unit, the Proctor-Form, permits great versatility to be built around it—the basic line of equipment would consist of a weighing feed, a breaker garnett, and

for DYEING • BLEACHING • FINISHING • PROCESSING

HERE'S A BETTER METHOD OF JOINING CLOTH



MERROW Butted Seams



Joining piece goods end-to-end with a Merrow Butted Seam improves processing and saves material because:

- Material moves through continuously, speeding production.
- Seam opens *flat* under tension of processing.
- Lack of bulk at seam simplifies calendering, shearing, napping, printing, coating, filling, etc.
- Seam "gives" with material.

Machines may be used in conjunction with several different types of cloth handling equipment and are also available for joining *knitted* fabric for processing.

Write today outlining your particular processing problem. We'll be glad to make recommendations and submit sample stitches on your own material.

The MERROW MACHINE COMPANY

2805 LAUREL ST. • HARTFORD, CONN. • U.S.A.

A BASIC PRODUCER'S GUIDE TO FINISHED PRODUCT

SULFURIC ACID

TENNESSEE CORPORATION,

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Our complete control of raw materials from mine to finished product allows our total independence from elemental sulfur and enables **TENNESSEE CORPORATION** to accommodate and ship large tonnages of acid quickly and with minimum notice.

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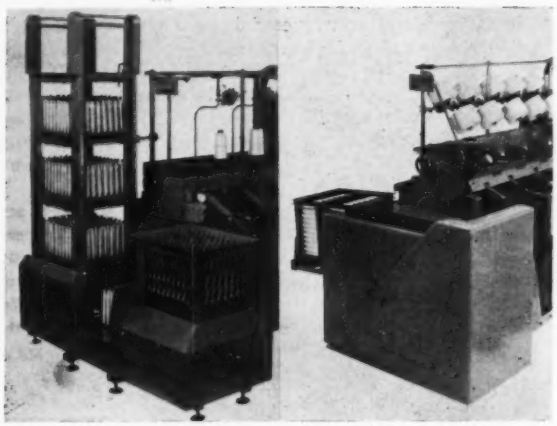
intermediate feed supplying this unit, which would in turn deliver to the subsequent finishing operations. It prepares a nonoriented web or batt by means of a licker-in feed roll to open the stock. The high speed main cylinder carries the stock to an air transfer point and a screen cylinder against which the stock is formed. This set-up is most satisfactory on short, loose stocks or slippery fibers such as cotton, short, uncrimped synthetics, short wools, etc. Capacity ranges up to 200 pounds per hour.

Proctor & Schwartz, Inc., Seventh St. and Tabor Rd., Philadelphia 20, Pa.

Do you want more data? Write ◂ or use card on page 163; list C-113

Winders fitted for special duty



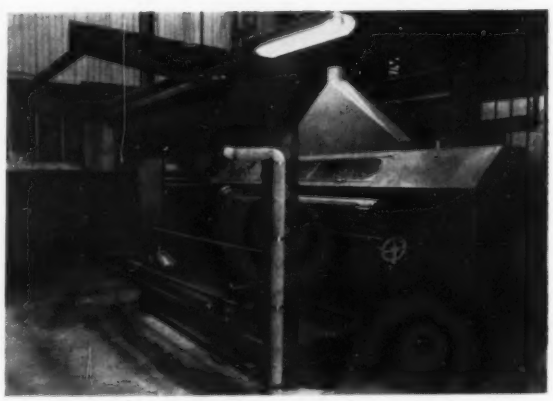
Left—Attachment for loading pin boards. Right—Attachment for loading Draper magazines.

Scharer filling winders may now be equipped with attachments for filling pin boards or for filling Draper automatic magazines. In the latter instance the winder inserts the necessary tip bunch.

Yoemans Textile Machinery Co., P. O. Box 1661, Spartanburg, S. C.

Do you want more data? Write ◂ or use card on page 163; list C-114

Machine improves all face-finished goods



A finishing machine designed to improve all face-finished goods and simultaneously apply luster to wool, synthetics, and blends, can be used for finishing high pile

fabrics, especially woolen and blended fabrics.

Employing an electrically heated aluminum ironing roll with accurate temperature control, the machine gives finishing speeds of from two to fifteen yards per minute and employs a temperature range from 200 F to 500 F. The ironing roll and the method by which the fabric is guided through the machine are specifically designed to split the fibers, imparting a soft and silk-like appearance even to low-grade materials.

Frank W. Egan & Co., Adamsville Rd., Somerville, N. J.

Do you want more data? Write ◂ or use card on page 163; list C-115

¾ to 7½ hp adjustable drives offer low upkeep

Availability of the Louis Allis "Ajusto-Spede" adjustable-speed drive in ratings from ¾ to 7½ horsepower with a stationary field construction has been announced.

All brushes, commutators, and slip-rings have been eliminated, substantially reducing maintenance. The redesigned construction in these ratings also reduces the length of the drive up to 22%.

Designed to supply precise operating speeds for machine tools, process machinery, windups, conveyors, printing presses, and similar equipment, the drive is suitable for continuous operation at full load (constant torque) in ranges as high as 34:1 and for intermittent use from 0 to full speed, or any rpm in between. This apparatus is also intended as an economical method of modernizing existing machinery to run at more efficient speeds.

An exclusive feature of the drive is a tachometer feedback circuit that continually monitors the drive shaft and automatically corrects speed as required. "Jogging" (or "inching") control is also standard.

In the "Ajusto-Spede" drive the a-c motor drives a clutch drum at constant speed while speed on the clutch spider (output member) is adjusted by varying d-c excitation to the clutch coil. Direct current is supplied by a small controller. Finger tip command of drive operations is concentrated in a separate operator's station.

The Louis Allis Co., Milwaukee 1, Wis.

Do you want more data? Write ◂ or use card on page 163; list C-116

System for printing reactive dyes

An emulsion printing technique developed jointly by Ciba Company and Stein, Hall & Co., Inc., uses an emulsifying agent (Emulsifier SH) and a carrier (Viscobond) to apply reactive colors and produce sharp, clear prints having higher color yield than the conventional gum system. The technique applies to both screen and machine printing. Color loss in the process is considerably reduced.

An emulsion of mineral spirits and water is added to the emulsifying agent. At that point the thickening agent or carrier is introduced to the emulsion to increase the solids and insure emulsion stability and act as a viscosity regulator. The resulting free-flowing emulsion allows printing to be accomplished under high-speed conditions with true reproduction of engraving.

Stein, Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

Do you want more data? Write ◂ or use card on page 163; list C-117

A HIGH SPEED TWISTER SPINDLE

by Zinser

FOR SPEEDS UP TO 15000 RPM AND PACKAGE WEIGHTS TO 15 POUNDS

EQUIPPED WITH GENUINE SKF - HF & HZ ROLLER BEARING INSERTS.

SWEDISH STEEL CHROME PLATED BLADE

CHROME PLATED STEEL WHORL

INTERNAL EXPANSION KNEE BRAKE OR FINGER BRAKE

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For all Twisting Applications, including: Draw-Twisters, Ply and Cable Twisters, and Up-Twisters. Many thousands are running perfectly in mills in the United States.

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Equipment briefs

A moisture meter for man-made fibers and silk can be used with one hand and the measurement itself can be effected within a few seconds. The meter is fitted with scales for acetate, viscose, and cuprammonium fibers and yarns, and natural silk. It is possible to record the moisture content of other man-made fibers and mixtures of them by developing special scales.

R. Acker, P. O. Box 124, Heidelberg, Germany.

Do you want more data? Write supplier or use card on page 163; list C-204

Plastic picker cuts loom maintenance cost. Exceptionally long life is provided by the "Durapic" plastic picker, a long-chain, high-molecular-weight polyethylene loom part now available.

Steel Heddle Mfg. Co., Southern Shuttles Div., Paris Station, Greenville, S. C.

Do you want more data? Write supplier or use card on page 163; list C-205

Punched-card accounting for small mills. A system of punched-card data processing specially designed for small business makes it possible to machine process such accounting work as: production control, payroll, inventory control, accounts receivable, and sales analysis. Consisting of four basic pieces of equipment—the alphabetical punch, sorter, alphabetical tabulator and summary punch, and reproducing punch—the system operates at a speed of 60 cards-per-minute, and can be adjusted to perform faster.

Remington Rand Univac Division of Sperry Rand Corporation, 315 Fourth Ave., New York 10, N. Y.

Do you want more data? Write supplier or use card on page 163; list C-206

Backing makes tufted broadloom hold width, tufts. A laminated backing now available imparts maximum dimensional stability and improved hand to the carpet and also securely locks the tufts. The uniformity, squareness of mesh, and high laminating qualities offered by "Stabiloc Scrim," which is a woven mesh fabric of kraft yarns, are achieved through tightly twisting the kraft yarns and through close quality control during all phases of manufacture.

Deltox Rug Co., Oshkosh, Wis.

Do you want more data? Write supplier or use card on page 163; list C-207

Improved automatic renewable-media air filter. Stronger glass fiber filtering media with an improved adhesive, media drive has fewer moving parts and one will serve up to six units, less maintenance time required, maximum effective filtering area per unit, and corrosion-resistant construction are improvements which have been incorporated in a new model of American Air Filter's automatic renewable-media air filter. Designated the Model B "Roll-O-Matic," the easy-to-install device offers high cleaning efficiency, low power consumption, and easy servicing. It notifies the operator when it needs attention.

American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky.

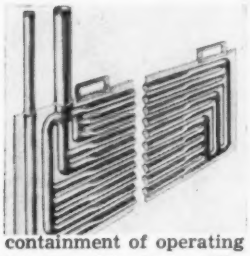
Do you want more data? Write supplier or use card on page 163; list C-208

A continuous chemical analyzer can detect trace materials down to parts per billion with an accuracy of one per cent. The instrument can be hooked onto a process

stream or waste stream, liquid or gas, to monitor and record concentration levels of any material or number of materials. Called the Auto-Analyzer, it is available for single or multiple component determination of such materials as copper sulfate, sulfur dioxide, cyanides, iron, ammonia, etc.

Technicon Controls, Inc., Chauncey, N. Y.

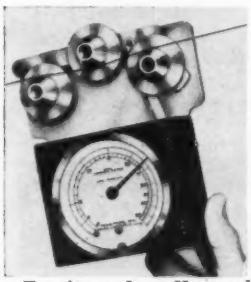
Do you want more data? Write supplier or use card on page 163; list C-209



Assures even distribution of heat in process tanks. A heat transfer unit recently announced features a branched arrangement at the inlet that assures even heat distribution over its entire surface and minimizes blocking of lower passages with condensate. It provides containment of operating pressures up to 250 psi, with a 5-to-1 safety factor. The improved distribution is particularly advantageous in applications where steam is used as the heating media. It provides faster heat-up of many types of tanks such as process tanks of all types, storage tanks, and similar heating applications.

Platecoil Div., Tranter Mfg. Co., Inc., Lansing, Mich.

Do you want more data? Write supplier or use card on page 163; list C-210



A tension meter has a range as high as 50 pounds on moving filaments, yarns, etc. Both outer rollers are lowered simultaneously by a control lever to receive the member to be measured. Moving the lever to its opposite position puts the yarn in test position. The tension, in pounds, is indicated on a large, legible dial.

Tensitron, Inc., Harvard, Mass.

Do you want more data? Write supplier or use card on page 163; list C-211

Self-cleaning, semi-steel pipeline strainers are offered in sizes from ¼" through 3". Features of the strainers, Type AT, are: high strength; tightly fitting screen cylinder; perforated heavy gauge screen with spot-welded lap seams; built-in sediment collection chamber integral with cap, and 45-degree blow-down connection angle. Every strainer is hydrostatically tested and rated for steam or liquids to 250 psi and 475 F.

Sarco Co., Inc., 635 Madison Ave., New York 22, N. Y.

Do you want more data? Write supplier or use card on page 163; list C-212

Wide-belt, smooth-face variable speed sheaves operate on fixed centers, employ 1 3/16" V-belts, and are offered in capacities of one to three horsepower with speed change ratios as high as eight to one. A combination of two of these sheaves and a hand control constitutes a practical variable-speed drive.

Speed Selectors, Inc., P. O. Box 312, Chagrin Falls, Ohio.

Do you want more data? Write supplier or use card on page 163; list C-213

A take-up steel strapping tool is used to apply steel strapping to packages of varying sizes, shapes, and weights. It may be operated in any position and will strap in any direction—using the right or left hand. Seals are applied to the rear of the tensioning wheel, and overlap is cut to the minimum required for joint security. Two

The Laurel Leaf

BUSINESS MAGAZINE EDITION

LAURAVEL SC

A versatile softener for finer finishing of all types of yarns and fabrics.

If you are looking ior a softener just a "little better than the rest," you should know about LAURAVEL SC, a nonionic softener recommended for the fine finishing of all types of yarns and fabrics . . . especially cotton goods. It's available as a soft liquid paste that's readily dispersable in hot water. It bestows full-bodied softness to fabrics, resists aging, and will not alter shades nor yellow whites.

Much of LAURAVEL SC's wide popularity results from its high resistance to salts, acids, and alkalies. It is stable in salt, Epsom Salt, and acid-chrome finishing baths, and may—under certain conditions—be used in the presence of 1% to 2% solutions of salt, making it ideal for softening many direct colors where a salt color fixative is used

LAURAVEL SC is more compatible than many of its anionic counterparts with other finishing agents, such as resins and dextrines. Fabrics finished with it show excellent resistance to scorching. Used as a top softener in resin-treated goods, it is stable to residual products in the goods. It gives a superior lubrication to improve sewing and cutting properties, and adds good napping characteristics to fabrics. It gives a hand far less limp and raggy when used as a replacement for many conventional oils and softeners in compressive shrinking processes.

It's really easy to prepare and apply LAURAVEL SC—just mix with hot water and add to the last rinse. For finishing mixes, it may be added directly to the batch and boiled up with the rest of the ingredients. And, you can apply it with virtually any type of equipment. Write for a generous free sample and *see for yourself* what excellent results you'll obtain!

Laurel Brand 50 YEARS OF SERVICE TO INDUSTRY 1909-1959

Laurel SOAP MANUFACTURING CO., INC.

TIOGA, THOMPSON & ALMOND STS., PHILA. 34, PA.

Warehouses: Paterson, N. J. Chattanooga, Tenn. Charlotte, N. C. Greenville, S. C.

holding pawls are employed to increase holding power. Offered in two models: the OL (light duty) and OM (medium duty) for using ⅜", ½", ⅝", and ¾" strapping respectively.

Stanley Steel Strapping, Div. of The Stanley Works, New Britain, Conn.

Do you want more data? Write supplier or use card on page 163; list C-214

Pillow block units are sealed for life with a high-grade lubricant. The one piece, malleable ball-bearing units, called the LP Series, are ready for assembly on the shaft and are supplied in the following sizes: ⅞", 15/16", 1", 1¼", 1⅜", and 1 7/16".

Sealmaster Bearing Div., Stephens-Adamson Mfg. Co., Ridgeway Ave., Aurora, Ill.

Do you want more data? Write supplier or use card on page 163; list C-215

Automatic and continuous loom cleaning is now done by Oscillaire units traveling on ceiling-mounted rails. Originally the units traveled on loom- or floor-mounted tracks.

Parks-Cramer Co., P. O. Box 444, Fitchburg, Mass.

Do you want more data? Write supplier or use card on page 163; list C-216

Atomizers may be tested for performance on an atomizer test stand that provides for complete testing and adjustment. Portable, it may be carried from one test station to another, connected to water and air lines, and put in use immediately. It has its own float-controlled, constant-level water tank, its own air reducing valve for correct operating pressures, and its own pressure gauge. A floating ball in a transparent tube indicates atomizer capacity in pounds per hour as atomizer adjusting screws are turned, making calibration a simple and speedy operation.

American Moistening Co., Cleveland, N. C.

Do you want more data? Write supplier or use card on page 163; list C-217

Card flats that lower the nep count are clothed with split-face foundation and are called Interval flats. A section of the foundation along the center of the flats is left bare of wire. Thus the carding action is doubled from the presence, on each flat, of a section of wire, a blank section, and a second section of wire.

Charlotte Mfg. Co., Box 10314, 421 Penman St., Charlotte, N. C.

Do you want more data? Write supplier or use card on page 163; list C-218

Loom check straps that offer up to four times the life experienced in ordinary straps are made of a material especially designed for textile use. In one test run the strap required no adjustment in around-the-clock running at 185 ppm for 15 weeks.

Extremultus, Inc., 405 Lexington Ave., New York, N. Y.

Do you want more data? Write supplier or use card on page 163; list C-219

A portable chain vise eliminates "knuckle busting" and speeds all pipe work. The No. 450 model features a large, easy-to-operate chain tightening handle on top of the vise base. Handle and tightening nut are anchored to the base and can't pull out. It has a capacity from ⅛" to 5" and

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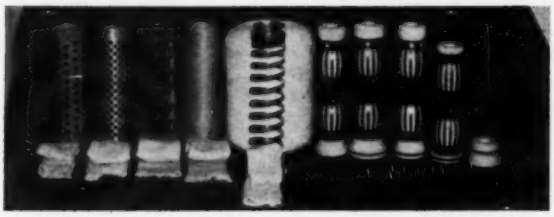
is fitted with folding legs and built-in tray. Bench chain vises are also available with this top-screw adjustment, in five sizes for from ⅛" to 8" pipe, conduit, or rod.

The Ridge Tool Co., Elyria, Ohio.

Do you want more data? Write supplier or use card on page 163; list C-220

Tube adapters that are very light in weight offer improved softness control of dye packages, and can be used



with Franklin springs, Davidson springs, or Dytex tubes.

Chavis Textile Sales Co., Box 246, 920 N. Highland St., Gastonia, N. C.

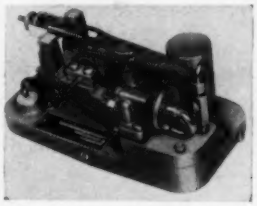
Do you want more data? Write supplier or use card on page 163; list C-221

A series of V-belt drives covers the complete range of horsepower capacities available in conventional drives. With the Dyna-V series the majority of industrial drives can be handled with belts only 3/8" wide and with sheaves that are reduced both in width and outside diameter. Sheaves of the 3/8" (nominal top width) size, known as 3V, are made with from one to 10 grooves and are designed for drives ranging from one to 50 horsepower. The 5/8" size, called the 5V series, includes sheaves receiving from three to 10 belts and will handle drives up to 200 horsepower. There is also an 8V series of made-to-order sheaves using one-inch belts for up to 1500 horsepower.

Dodge Mfg. Corp., 3500 Union St., Mishawaka, Ind.

Do you want more data? Write supplier or use card on page 163; list C-222

A temperature transmitter called the Sensaire is designed for low-cost temperature measurement requirements in the minus 30 F to plus 1200 F range. It may be mounted almost anywhere and is unaffected by normal plant vibration. A thumb screw adjustment zero sets over a wide range.



Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.

Do you want more data? Write supplier or use card on page 163; list C-223

Loom pickers of polyurethane are extremely tough, yet resilient (almost 40,000,000 picks have been registered by one in wear tests) and are one-piece molded with a picker stick slot designed for maximum "gripability." The picker remains firm and rigid throughout its life.

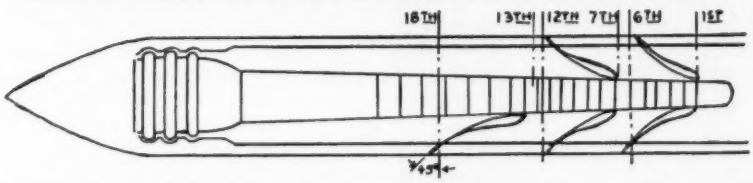
Louis P. Batson Co., P. O. Box 772, Greenville, S. C.

Do you want more data? Write supplier or use card on page 163; list C-224

A pneumatic atomizing nozzle for simultaneously spraying in two or more directions provides a compact, simplified method to meet multiple spraying needs in a wide variety of industrial applications. The nozzle can be supplied with two, three, or four heads, each adjustable to any position in a 360-degree range. Standard

BAXTER'S NYLON SHUTTLE SPRING-LINE

A REAL MONEY-SAVING SUBSTITUTE FOR SHUTTLE FUR



The first two loops of BAXTER'S NYLON SHUTTLE SPRING-LINE are inserted in the shuttle wall at a point opposite the 6th ring on the quill. The holes for the loops are drilled in opposite shuttle walls ¼" from the top and bottom at an angle of 45 degrees. Let these loops extend to the first ring. The second set is placed opposite the 12th ring with the loops extended to the 7th ring. A single loop is placed at the 18th ring to reach the 13th. Install in keeping with twist.

Vary these suggestions to your ideas and your own special requirements.

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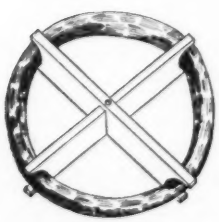

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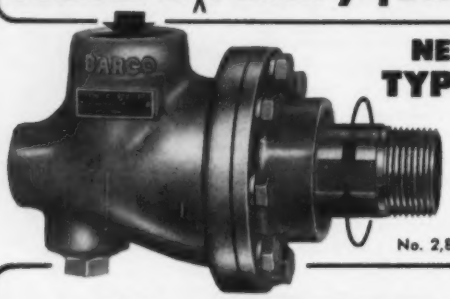

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RESISTS SEAL RING BREAKAGE—The spherical seal ring is under compression, not *tension*, loading. Self-adjusting for wear. Seal withstands shock loads and alternating hot and cold service.

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nozzles are brass but are supplied in stainless steel upon request.

Spraying Systems Co., 3201 Randolph St., Bellwood, Ill.

Do you want more data? Write supplier or use card on page 163; list C-225

Two dry chemical portable fire extinguishers come in 2½- and 5-pound capacities and can be recharged to their 110- to 180-pound working pressures with either air or nitrogen. There are no locking pins to remove, no valves to turn, and no inverting and no bumping are needed to bring them into action. The chemical is released by depressing an actuating lever.

Walter Kidde & Co., Inc., 675 Main St., Belleville 9, N. J.

Do you want more data? Write supplier or use card on page 163; list C-226

Elastic samples may be tested on the Elastic Tester in lengths up to 10 inches. The unit will flex four 1½" strips, two 3½" strips, or one 8" strip at 58 cycles per minute. The tester stroke can be set between zero and eight inches and will register strokes on an integral counter.

Custom Scientific Instruments, Inc., Kearny, N. J.

Do you want more data? Write supplier or use card on page 163; list C-227

New Books

Volume IV, Edition V of *Engineering and Technical Data* handbook contains 504 pages of technical information on textile manufacturing from opening through twisting. Among the special sections are those pertaining to lubrication, production tables, electrical and power data, fiber and yarn data, and humidification. Copies are available from Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. Price: $15.00 (for students, $7.00).

Yield on Sight is a chart that determines the yield of estimated widths of materials, eliminating the need for slide rules and computing tables. Accurate to 1/8 pound and 1/8 yard, it can be applied to any type of soft goods. Copies available from The Textile Computer Co., Inc., 303 Fifth Ave., New York 16, N. Y. Price: $3.95.

Written for those professionally responsible for maintenance of grounds of any size, *Grounds Maintenance Handbook* is a complete exposition of virtually every aspect of grounds maintenance and development from the original selection of land through planting and seeding to the equipment and methods necessary to keep it in prime condition. Thoroughly indexed, it is immediately valuable as a quick-reference handbook. Copies available from Dodge Books, F. W. Dodge Corp., 119 W. 40th St., New York 18, N. Y. Price: $10.75.

A revised and up-to-date edition of *The Progressive Sewing Room* is available. Each point in the orginal text has been reevaluated in the light of the best current practices, and illustrations have been revamped and adjusted and many examples changed to reflect today's advanced sewing room methods. The text provides a practical working tool for designers, merchandisers, sales and office managers in the garment trades, and those responsible for sewing room production. Available from Fairchild Publications, Inc., 7 E. 12th St. New York 3, N. Y. Price: $6.50.

The second edition of *Textile Machinery Index* covers, as far as possible, developments in the textile machinery

field. The publication comprehensively catalogs the activities of the textile engineering and accessories industries, and all the members of the Textile Machinery and Accessory Manufacturers' Association are included among the several thousand entries comprising the directory section. Available from John Worrall, Ltd., Central Works, Oldham, Lancashire, England. Price: $5.88.

Modern Carpet Manufacture meets the demand, brought on by the many carpet developments in recent years, for a handy, up-to-date and comprehensive text book which covers in detail the diversity of processes involved in modern carpet manufacture. Written by A. Crossland, author of several articles in previous issues of TEXTILE INDUSTRIES dealing with the subject of carpet production techniques, this book covers the whole field of manufacture from the raw material to the finished product, and includes preliminary chapters on carpet yarns, dyeing, preparatory processes, and the elements of design, color, and fabric construction. Among the products discussed are seamless and double-face Wilton, Jacquard, Axminster and tufted carpets. Copies available from Columbine Press, Old Colony House, South King St., Manchester 2, England. Price $2.94.

The revised *"Elementary Textile Design,"* by Julius Clifford Hubbard, Jr., and John Vernon Walters, both of the School of Textiles, Clemson College, is designed to assist the student designer in the following areas: loom operation; basic twill and satin (or sateen) weaves; weaves derived from the plain weave; regular twills, and regular sateens; special weaves; and designing and setting shedding cams. The weave illustrations are in color. Copies available from the Clemson College Book Store, Clemson, S. C.

The published works of the Joint Executive Research Committee of the Canadian Association of Textile Colourists and Chemists (Quebec Section) and the Textile Society of Canada (Eastern Division) are available in *"Manufacturing, Dyeing, and Finishing Defects in Broad Woven Fabrics—Their Causes and Cure."* The book is the result of committee studies in a great number of areas pertinent to the manufacture of woven fabrics production of finished woven goods. Copies available from The Textile Technical Federation of Canada, 223 Victoria Ave., Westmount, Montreal 6, Quebec, Canada. Price $2.00.

"Your Most Important Raw Material" discusses the importance of water to our national well being. An Edward Marburg Lecture, it was presented at the 1957 annual meeting of the American Society for Testing Materials. Copies may be obtained from the American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. Price $1.25.

Zwirne und Zwirnmaschinen covers (in German) plied yarns and twisting machinery. Preliminary sections deal with calculation of count and twist; the major part of the book describes in detail various types of twisting machines, principally German and Swiss. Both standard and novelty yarns are discussed. Available from Konradin-Verlag Robert Kohlhammer, Stuttgart, Germany. Price: Approx. $9.90.

Cost Control through Electronic Data Processing is designed to assist management in deciding "the right questions to ask." Without this knowledge modern electronic data processing may multiply rather than reduce the costs of a business enterprise. The book details the practical ground rules of question asking (programming) and corrective managerial action in the use of electronic data processing as a cost-control instrument. Available from the Society for Advancement of Management, Research Div., 74 Fifth Ave., New York 11, N. Y. Price: $1.50.

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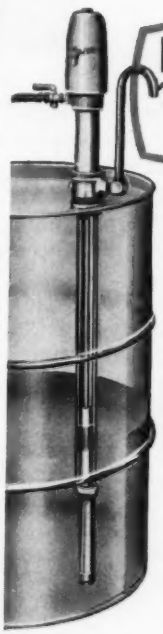

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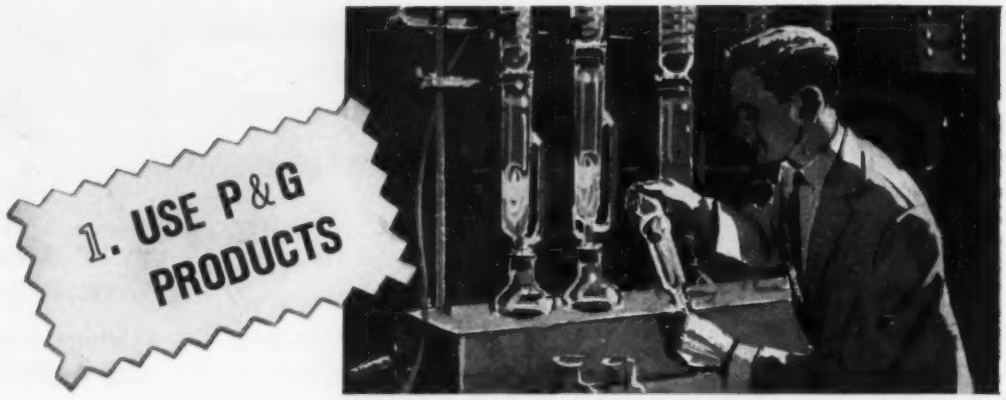

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3-3 PROFIT THROUGH FACTORING. Brochure gives facts on the use of factoring as a modern plan for developing sound business growth and added profits. Walter E. Heller & Co., Dept. TI-2, 105 W. Adams St., Chicago 99, Ill.

3-4 P.I.V. VARIABLE SPEED DRIVES. Illustrates and describes complete line of P.I.V. (positive, infinitely, variable) speed drives which are available in eight sizes, ½ to 25 h.p. Provides complete engineering data and selection tables. Link-Belt Company, Dept. PR, Prudential Plaza, Chicago 1, Illinois.

3-5 "SAV-YARN" TWISTER. Describes the "Sav-Yarn" Twister with revolutionary stop motion for each end which eliminates drop ply, roller laps, and produces knotless yarn. Collins Bros. Machine Co., Inc., 647 Roosevelt Ave., Pawtucket, R. I.

3-6 ENGINEERED FLOOR MAINTENANCE. Technical booklet shows precisely how Puritan's Engineered Maintenance reduces floor-cleaning and sealing problems to save time and money. Puritan Chemical Company, 916 Ashby St., N.W., Atlanta 18, Ga.

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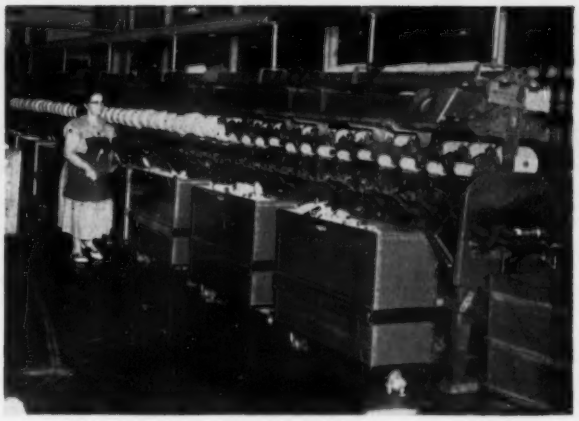
3-8 DYEING OF CRESLAN. Booklet deals with procedures for applying various classes of dyes to Creslan acrylic fiber. Request TSC 18, Allied Chemical National Aniline Division, 40 Rector Street, New York 6, New York.

3-9 INTRODUCING DARVAN. Booklet describes Darvan, a new dinitrile fiber. Includes uses, characteristics, comparative qualities, and describes manufacturing process. B. F. Goodrich Chemical Co., 3135 Euclid Ave., Cleveland 15, Ohio.

3-10 NATURAL GAS FOR TEXTILES. Booklet shows why natural gas is a natural for textiles with applications as boiler fuel, in drying, singeing. Clean, flexible, and low cost. Piedmont Natural Gas Co., 523 S. Tryon St., Charlotte, N. C.

3-11 SODIUM BISULFITE. Bulletin covers properties, typical analyses, description, and specific uses of the chemical in textiles. Inorganic Chemicals Div., Monsanto Chemical Co., 800 N. Lindbergh Blvd., St. Louis 66, Mo.

3-12 V-BELT DRIVES. Bulletin describes completely new line of V-Belt drives that are smaller, cost less, weigh less and require less space than conventional V-belt drives. Dodge Mfg. Co., Mishawaka, Ind.



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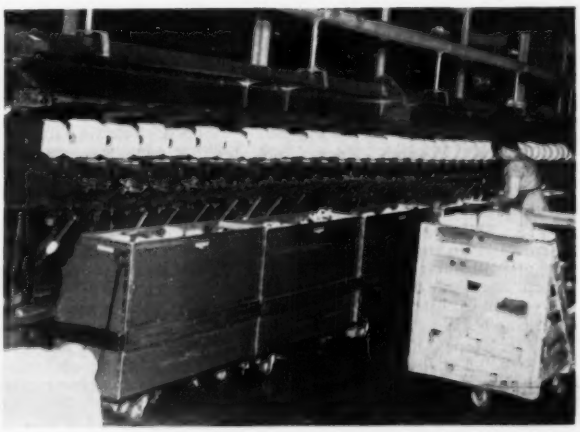

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T-103 Card Grinding Information. Care and operation of cards. B. S. Roy & Son Co., Worcester, Mass.

T-104 Card Clothing. Describes Strip-O-Matic Card Clothing. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia, Pa.

T-105 Versa-Matic Drawing Frame. Describes drafting elements, quality of sliver, roving and yarn possible. Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

T-106 Sargent Opener. Describes opener with rotary evener and stripper. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-107 Feathertouch Drafting. How to get "highest production per frame at lowest cost." Ideal Industries, Inc., Bessemer City, N. C.

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T-109 Flexidyne Individual Card Drive. Describes operating principles, includes prices. Dodge Mfg. Corp., Mishawaka, Indiana.

T-110 Bobbins. Catalog describes metal, wood and plastic bobbins. Illustrations show actual use. Lestershire Spool Div., National Vulcanized Fibre Co., Wilmington, Del.

T-111 Magnetic Ideas. Booklet shows uses of permanent magnetic separation equipment in opening room as well as throughout mill. Removes tramp iron, prevents fires. Eriez Mfg. Co., Erie, Pa.

T-112 Advantages of Aldrich Pickers. Good technical text, comprehensive pictures. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

T-113 New Condenser Tape. Describes Supr-O-Tape, an impregnated fabric condenser tape. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

T-114 84" Woolen Card. Includes picture, floor plan, description, and technical details. Davis & Furber Machine Co., North Andover, Mass.

T-115 SRRL Opener-Cleaner. Information on new SRRL development for opening and cleaning cotton being manufactured for sale to mills by Davidson-Kennedy Co., 1090 Jefferson St., N. W., Atlanta, Ga.

T-117 Stops Frame on Roving Failure. Brochure tells how device instantly detects all roving failures and stops frame; also how operators detects all roving failures and stops can handle more spindles with less ends down. Adams, Inc., 209 E. Stone Ave., Greenville, S. C.

T-118 Synthetic Blender. Information on blending machine that assures delivery of synthetic fibers to pickers, webbers, etc., in such shape that these machines can do their work properly. Cen-Tennial Cotton Gin Co., Columbus, Ga.

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T-120 Pin Drafters. Textile job report No. 21 tells how Warner & Swasey Pin Drafters help modify jute system for carpet yarns at Lehigh Spinning Co., Allentown, Pa.

T-121 Universal Card Coiler. Literature describes both head and base swivel for adjustment. Includes data on 90-day free trial. McDonough Power Equipment, Inc., McDonough, Ga.

T-122 Recondition Opening & Cleaning. Bulletin gives whys and wherefores of reconditioning your opening and cleaning lines. Special attention given to each machine with suggestions as to parts replacement. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

T-123 Coiler Conversions. Full facts on low initial cost conversion to larger coiler cans. Lists advantages, has complete description. Southern States Equipment Corp., Hampton, Ga.

T-124 Card Drive. Bulletin 301-a describes simple, safe, efficient individual card drive. Southern States Equipment Corp., Hampton, Ga.

T-127 Pneumastop for Fly Frames. Brochure explains, in terms of dollars and cents, the benefits of having Pneumastop-equipped roving frames in the mill. Illustrated to show its operation and several different types of installations. Pneumafil Corp., Charlotte 8, N. C.

T-128 Quick-Set Roving Frame. Integral machine for processing of worsted, synthetic or blended yarns. Whitin Machine Works, Whitinsville, Mass.

T-132 Proctor Super Picker. Data sheet gives details of the Proctor Super Picker for use on slabs of baled cotton, or wool and synthetic blends in layers up to 12" thick. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

yarn and warp making

T-201 Products For Spinning and Weaving. Complete line, applications, advantages shown. Dayton Rubber Co., Textile Div., Dayton, Ohio.

T-202 New Bobbin Manual. Complete bobbin guide. Lestershire Spool Division, National Vulcanized Fibre Co., Wilmington 99, Delaware.

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T-210 Conical Rings and Flyers. Complete details and specifications. Herr Manufacturing Co., Inc., 318 Franklin St., Buffalo 2, New York.

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T-212 Automatic Cleaning Equipment. Working details and advantages of the Tri-Rail Cleaner. American MonoRail Co., 13107 Athens Ave., Cleveland 7, Ohio.

T-214 Textile Mill Lubricants. Description of Ben Boy Bearing, Spindle, Twister Lubricants and Non-Melting Oils. Georgia-Carolina Oil Co., Box 101, Macon, Ga.

T-215 Custom Made Thread Guides. Includes composition, properties, specifications of all designs. American Lava Corporation, Chattanooga 5, Tenn.

T-216 Spinning Frame Conversions. Big-package, new-frame results at half the cost. Meadows Mfg. Co., Station A, Atlanta, Ga.

T-217 Collecto-Vac. New development collects lint, fly and broken ends. The Bahnson Company, Winston-Salem, N. C.

T-219 Spinning and Twister Rings. Complete details, pictures, price list. Whitinsville Spinning Ring Co., Whitinsville, Mass.

T-220 Lint-Free Creel. Complete details and pictures of the new Airfoil Design. Pneumafil Corporation, Charlotte 8, N. C.

T-222 Suction Cleaning System. Details on new Collector Unit Model C-4. Pneumafil Corp., Charlotte 8, N. C.

T-223 Facts About Your Flyers and Spindles. Advantages of smooth flyer and spindle operation. Ideal Machine Shops, Bessemer City, N. C.

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T-225 Lapless Endless Spinner. Full information available. Ton-Tex Corporation, 31 Columbus Ave., Englewood, N. J.

T-226 Worsted Spinning. Describes five stages from top to yarn. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

T-227 Spindle Oiling Machine. Features and advantages noted. Wicaco Machine Corp., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

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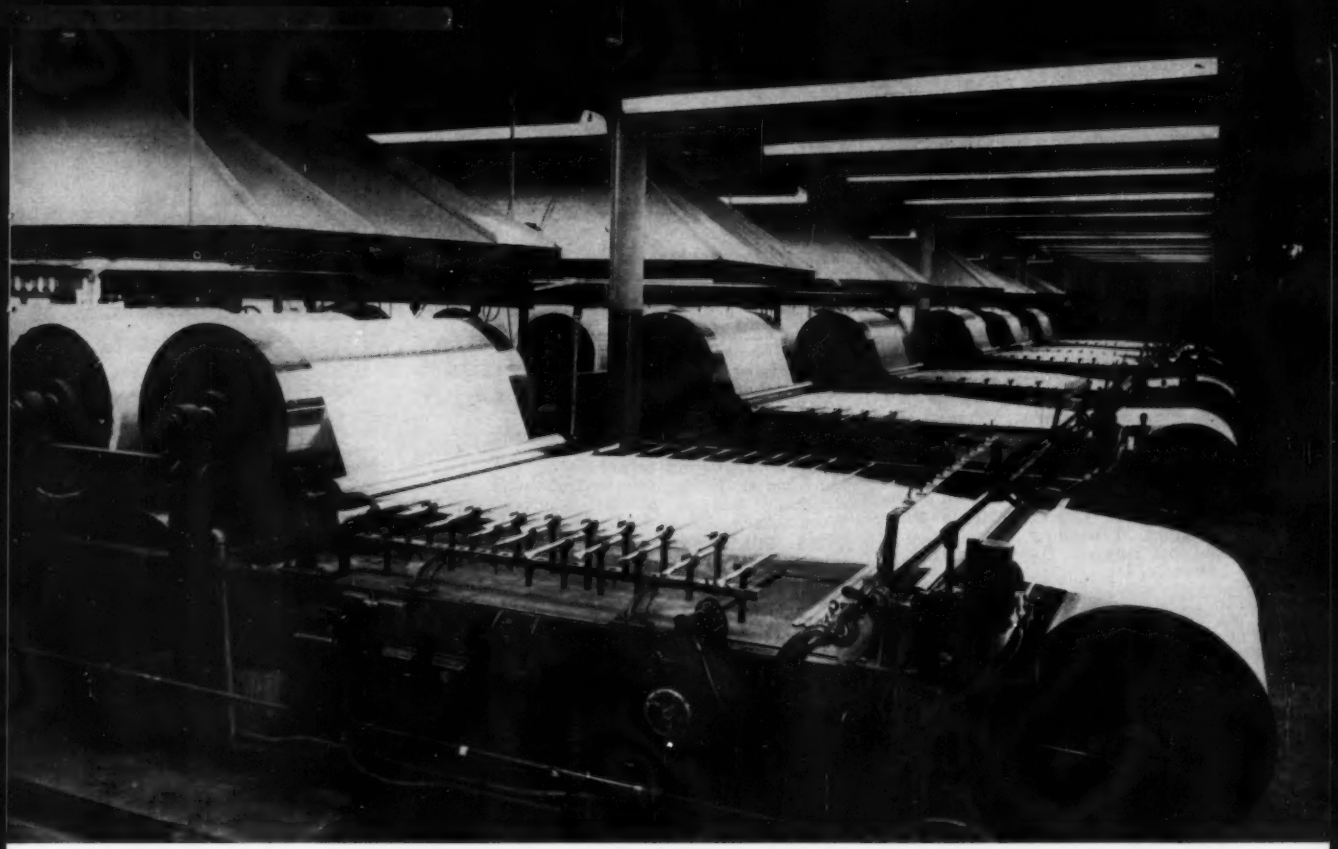

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T-232 Short Cut To Staple Fiber Spinning. Ten steps in operation of the Tow Stapler. Turbo Machine Co., Lansdale, Pa.

T-233 Weaver's Knotter. Instructions as to use, description. A. B. Carter, Inc., Gastonia, N. C.

T-234 Textile Roll Coverings. Describes complete line as well as other mill supplies. Armstrong Cork Co., Industrial Div., Lancaster, Pa.

T-236 Tape For Driving Spindles. Describes banding for spindle drives on twisting, roving and spinning. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

T-239 Large Package Twister. Information on new anti-friction Jumbo Twister which carries a 14" bobbin with a 12" build. Meadows Mfg. Co., P. O. Box 4354, Atlanta, Ga.

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T-243 Anti-Friction Twister Bearings. Find out how bearings helped make The Meadows Twister almost friction-free. Fafnir Bearing Company, New Britain, Conn.

T-245 Tool For Applying Travelers. Bulletin on special tool for setting-on C-shaped ring travelers. Tells how traveler losses may be reduced up to 30%. Gubelin International Corp., P. O. Box 305, Mount Kisco, N. Y.

T-246 Better Beams. Information on three ways to make better beams. Kidde Textile Machinery Corp., Farrand St., Bloomfield, N. J.

T-249 Vari-Speed Motor Pulley. Describes variable speed control through use of simplified three-major-part disc-assemblies with only one lubrication point. Reeves Pulley Co., Reliance Electric & Engineering Co., Columbus, Ind.

T-250 Spinning Modernization. Booklet shows how lower costs and improved quality are obtained by spinning modernization. Roberts Company, Sanford, N. C.

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T-256 Variety of Bobbins. Information on complete line of bobbins for all types of looms and all types of stop motions by Emil Adolff of Germany. Textile Corp., 695 Summer St., Stamford, Conn.

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T-304 Loom Production Charts. Celluloid card shows yards per loom per week. Ralph E. Loper Co., Greenville, S. C.

T-306 The Story Of Starches. History and information on manufacture and use of starches. National Starch Products, Inc., 750 Third Ave., New York 17, N. Y.

T-307 Loading System. Pneumatic loading system for Saco-Lowell slasher. The Foxboro Company, Foxboro, Mass.

T-308 Steel Warp Beams. Beams for both broadloom and narrow fabrics. Milton Machine Works, Inc., Milton, Pa.

T-309 Penford Gums In Textiles. Describes their excellent properties for warp sizing spun yarns. Penick & Ford Ltd., Inc., 420 Lexington Ave., New York 17, New York.

T-310 Saco-Lowell Positrol Slasher. Includes advantages, photographs, cut-away drawings. Saco - Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

T-311 Rotary Unions. Cut costs, get better sealing on can dryers. Perfecting Service Company, 332 Atando Ave., Charlotte, N. C.

T-312 Air Slasher Dryer. Shows construction and operating details. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

T-313 Butt-Tacking Sewing Machine. Describes operation, installation of single thread butt-tacking sewing machine. The Merrow Machine Co., 28 Laurel St., Hartford, Conn.

T-314 Loom Reed Booklet. Describes in detail a variety of reeds. Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

T-315 Cocker Equipment. Information on warp sizer, beam warper, creels, tensions, back-winders, etc. Cocker Machine & Foundry Co., Gastonia, N. C.

T-316 Chemical Data Sheets. Available on a full range of chemicals. Nopco Chemical Co., Harrison, N. J.

T-318 Formulas For Slashing Arnel. Includes also information on warping, weaving and quilling. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte 1, N. C.

T-319 Eclipse Starches For Textiles. Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

T-320 Textile Accessories. Gives specifications of Gates textile accessories in handy pocket booklet. The Gates Rubber Co., 1001 Broadway, Denver 17, Colorado.

T-321 Cocker Slashers. Complete specifications and advantages, including allied equipment. Cocker Machine & Foundry Co., Gastonia, N. C.

T-322 Mounts For Looms. Vinyl mount eliminates need for bolts or paste. Clark, Cutler, McDermott Co., 106 W. Central St., Franklin, Mass.

T-323 Unifil Loom Winder. Describes new concept of filling preparation which needs no quilling area. Universal Winding Co., P. O. Box 1605, Providence, R. I.

T-324 Aligning Lays. Setting instructions for step-by-step aligning. Draper Corporation, Hopedale, Mass.

T-325 Traveling Loom Cleaner. Advantages of the new Oscillaire loom cleaner. Parks-Cramer Co., Fitchburg, Mass.

T-326 Draper Repair Parts Catalog. Contains illustrations covering all mechanisms and construction with complete listings. Draper Corporation, Hopedale, Mass.

T-327 Baling Presses. Describes complete line of motor-driven and hydraulic baling presses. Logemann Brothers Co., 3150 West Burleigh St., Milwaukee, Wis.

T-328 Textile Machinery Parts Catalog. Describes complete line of Dayco and Thorobred textile parts. Dayton Rubber Co., Dayton, Ohio.

T-329 Counting Devices. Describes complete line of counters for every application. Trumeter Company, 38 W. 32nd St., New York 1, New York.

T-331 Static Bars. Humorously illustrates how static can be overcome. The Simco Co., 920 Walnut St., Lansdale, Pa.

(Continued on next page)

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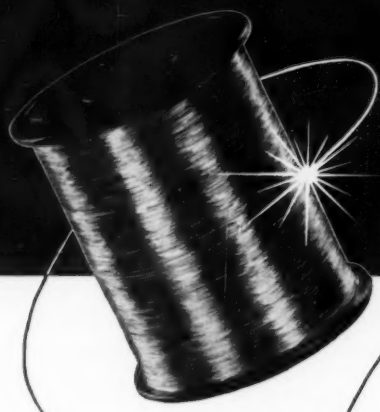

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T-332 Care Of Draper Shuttles. Describes how longer, troublefree service may be obtained. Draper Corporation, Hopedale, Mass.

T-334 Largest Slasher Order in History. Folder tells why Springs Cotton Mills bought 25 multi-cylinder slashers. West Point Foundry & Machine Co., West Point, Ga.

T-336 One - Piece Sizing Agent. Houghto-Size CW provides low kettle cost, results in free-running warp of high breaking strength, increasing weaving efficiency. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

T-339 Heliclone Loom Cleaner. Details on how it cuts costs, improves quality, reduces fire hazard. American Moistening Co., Cleveland, N. C.

T-340 Custom-Tailored Latex. Information on Vulcanols, latex based formulations which provide dimensional stability, firm pile anchorage, non-skid, non-fray, and the desired hand. Alco Oil & Chemical Co., Trenton Ave. and William St., Philadelphia 34, Pa.

T-341 Cloth Guides. Buletin 22.1 provides application diagrams and illustrations. GPE Controls, Inc., 240 E Ontario St., Chicago 11, Ill.

T-342 Hydraulics in Slasher Drives. Describes characteristics of petroleum base and fire-resistant hydraulic fluids, how to select best fluid for a given job. Vickers, Inc., Box 302, Detroit 32, Michigan.

T-343 Laminated Carpet Covers. Complete information on Rol-Lap Carpet Covers with cemented seams. Bemis Bros. Bag Co., St. Louis 2, Missouri.

T-344 Table Model Carpet Tufter. Literature on table model carpet machine which has yardage machine features. Makes throw-rugs or yardage, in cut or loop. Broad Street Machine Co., 2614 Broad St., Chattanooga 8, Tenn.

T-345 Tufting Machines. Literature on complete line of Cobble high speed tufting machines, including bedspread, throw rug, "carved" rug and two color rug machines. Cobble Bros. Machinery Co., Riverside Dr., Chattanooga, Tenn.

T-346 Facts On Non-Wovens. Fact file on non-wovens tells of new machinery, new methods of handling fibers, new bonding agents, etc. Curlator Corporation, Textile Div., E. Rochester, N. Y.

T-347 New Drying System. Describes high capacity, custom engineered drying equipment for tufted plants. Dalton Sheet Metal Co., Inc., Dalton, Ga.

T-351 Automatic Stop Motion. Complete information available on automatic stop motion for Titan warp tying-in machine. Edda International Corp., 469 Fourth Ave., New York 16, N. Y.

T-352 Automatic Guiding Equipment. Catalog shows various types of automatic guiding equipment for accurate cloth guiding. Fife Mfg. Co., Inc., P. O. Box 9815, Oklahoma City, Okla.

T-353 Backing for Tufteds How to get your tufting necessities with one telephone call. Fulton Bag and Cotton Mills, Atlanta, Ga.

T-354 The Story Of Latex. Booklet describes origin, history and uses of latex. Includes list of industrial applications. General Latex and Chemical Corp., 666 Main St., Cambridge 39, Mass.

T-355 Non-Woven Fabrics. Booklet gives outline of nature and history of non-woven and the manufacturing techniques of today. Booklet 56-219A, Chemical Div., Goodyear Tire & Rubber Co., Akron 16, Ohio.

T-358 Loom Supplies. Information on rod lubricant and applicator, sponge leather bunter, picker. Garland Mfg. Co., 54 Water St., Saco, Me.

T-359 Pressure Sensitive Tapes. Brochure tells of applications in yarn spinning, weaving, finishing, rug manufacturing, etc., Minnesota Mining & Mfg. Co., St. Paul 6, Minn.

T-360 Supplies For Tufters. Information on yarns for rug tufting or chenille or carpet backing. Piedmont Cotton Mills, East Point, Ga.

T-361 Eclipse Starches for Textiles. Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

T-362 Size That Satisfies. Information on getting the correct size package for your mill. Also on Bingham line of slasher rolls. Stodghill & Co., 716 Ponce de Leon Place, Atlanta, Georgia.

T-363 Rubber Covered Slasher Rolls. Handy booklet tells how to get longer life and better performance from rubber covered rolls. Includes data on handling, storing and grinding. Stowe-Woodward, Inc., Dept. C., 181 Oak St., Newton Upper Falls 64, Mass

T-365 Slashing Hints. A 20-page booklet offering helpful hints on warp sizing. Subjects: Size cooking equipment, section beam tension, sizing selvages, cooking, use of split rods, weighing for the mix, tips on cooking equipment, storage in kettles, etc. Seydel-Wooley & Co., 748 Rice St., N. W., Atlanta, Ga

T-366 Loom Supplies. Complete information on supplies for cam and dobby looms. Louis P. Batson Co., P. O. Box 772, Greenville, S. C.

knitting

T-401 Singlehead Full - Fashioned Machine. Literature on request from the Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-402 Forged Head Aluminum Beams. Gives specifications on new high-yardage beams. Milton Machine Works, Inc., Milton, Pa.

T-403 Raschel Knitter. Describes new Raschel-type knitting machine. Kidde Textile Machinery Corp., Inc., Farrand St., Bloomfield, N. J.

T-406 Needle Oil Does Not Stain. Details on "Gulftex 39" developed for knitting mills. Gulw Oil Corp., P. O. Box 1106, Pittsburgh 30, Pa.

T-407 Knitting Machines. Information on Wildman "TFS" 30" single section F-F machines and "AL" 32" diameter 32-feed "single purpose" circular interlock machine (rib type). Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-409 Knit Goods Finishing Machinery. Data on calenders, shrinkers, curers, extractors, steamers. Tubular Textile Machinery Corp., 33-61 54th St., Woodside, N. Y.

T-410 "Reading" Type 60 F-F Knitting Machine. Information about the new "Reading" Type 60, 38-section automatic full-fashioned hosiery knitting machine. Write Textile Machine Works, Reading, Pa.

T-411 Double Life of Knitting Cams. Technical information on how Chromalloy diffusion process produces a wear-resistant chromium carbide surface on knitting cams. Chromalloy Corp., 450-D Tarrytown Rd., White Plains, N. Y.

wet processing

T-501 Tubes For Package Dyeing. Describes Dytex tubes for one-time use. Sonoco Products Co., Hartsville, S. C.

T-502 Finishing Machinery. Text and photographs of complete line of machinery. Marshall and Williams Corp., 46 Baker St., Providence, R. I.

T-503 Water Analysis. Includes tables, conversion factors, indicators, standard solutions. Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-504 Urea Formaldehyde. Literature on urea formaldehyde or U.F. concentrate-85. Dept. CUFI-29-1, Nitrogen Div., Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-505 Acid Mordant Blue B. Details on Acid Alizarine Blue B for bright navy shades. Zinsser & Co., Inc., Hastings-on-Hudson 6, New New York.

T-506 Cationic Surface Active Agent. Describes Uversoft "D." Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

T-508 Peroxide Bleaching System. Illustrates and describes this continuous system. E. I. du Pont de Nemours & Co., Electrochemical Dept., Wilmington, Del

T-509 Surface Tension Depressant. Tells how product can be used for wetting, dye leveling or as a penetrant. Hart Products Corp., 1440 Broadway, New York, N. Y.

T-510 Textile Chemicals. Describes leading products for wet processors. Royce Chemical Co., Carlton Hill, N. J.

T-511 Brine For Textile Industry. Describes Lixate process for making brine. International Salt Co., Inc., Scranton, Pa.

T-512 Depuma. Describes odorless, viscous, non-evaporating emulsion for anti-foam. Koppers Co., Inc., Chemicals & Dyestuffs Div., 2010 Clarke Bldg., Pittsburgh 19, Pa.

T-513 Catalyst AC-6. Tells how curing efficiency may be stepped up as much as 25%. Monsanto Chemical Co., Plastic Division, Springfield 2, Mass.

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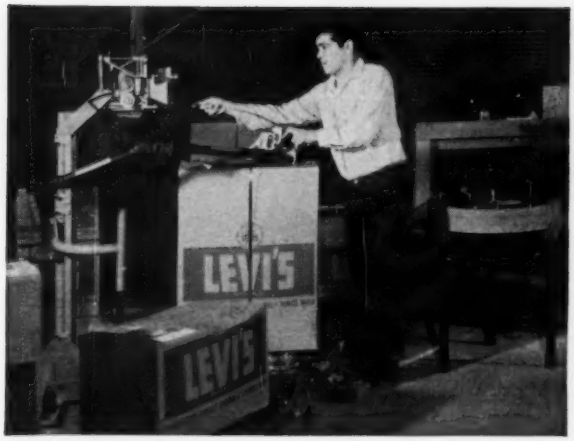
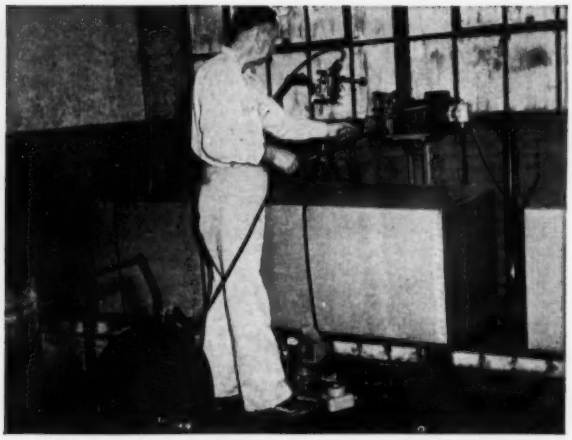
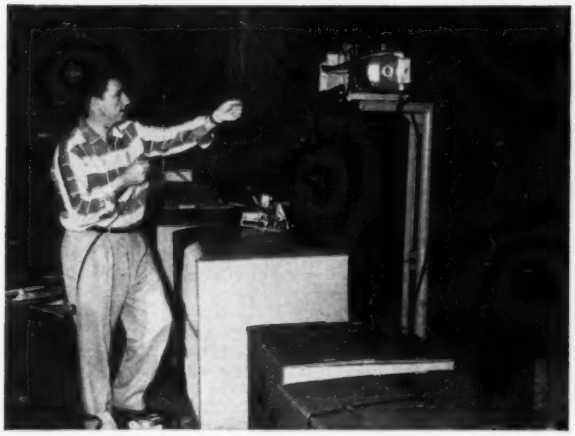


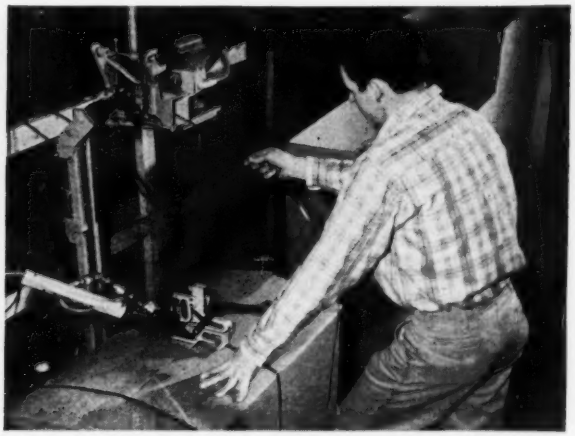
TROUSERS—One man works two conveyorized strapping stations...easily straps and weighs 440 cartons of various sizes per day, using Signode power strap feeders and Model A hand operated strapping tools. Production increased, and savings of 55% reported.



THREAD AND YARN—One man easily straps 300 cartons per day, four straps per carton, with a Signode power strap feeder and a Model AP air powered strapping tool. Operator has time for other duties. Two men were formerly assigned to carton strapping.



CHENILLES—One man straps 400 cartons per day. Cartons vary widely in size and weight. The operator has time for other duties, although two men formerly were needed. Signode power strap feeder and a Signode Model A tool are used.



FINISHED PRINT GOODS—One man straps 500 cartons a day, three straps per carton, using a Signode power strap feeder and a Model AP air powered strapping tool. Cartons vary greatly in size. Production has been more than doubled.

New low cost Signode power strap feeder a real money saver on textile packages

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T-514 Soda Ash Bulletin. Contains useful data covering this subject. Solvay Sales Division Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-517 Chemical Catalog. Lists products with chemical composition, properties and applications. Antara Chemicals Div., General Aniline & Film Corp., 435 Hudson St., New York 14, New York.

T-519 Hydraulic Power Units. Describes unit for operating hydraulic textile machines. B. F. Perkins & Son, Inc., Holyoke, Mass.

T-520 Proctor Drying Machinery. Describes all types of dryers, includes information on preboarding. Proctor & Schwartz, Inc., 7th St. & Tabor Rd., Philadelphia, Pa.

T-522 Cut Water Treatment Costs. Describes the control of scale, slime, algae and corrosion. Oakite Products, Inc., 126C Rector St., New York 6, New York.

T-523 Rapidase For De-Sizing. The properties and characteristics of Rapidase in detail. Wallerstein Co., Inc., 180 Madison Avenue, New York 16, N. Y.

T-525 Guiders And Tension Devices. Straight line guiding of open width goods. Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass.

T-526 Hycar Latices. Physical properties and typical fields of application. B. F. Goodrich Chemical Co., 3135 Euclid Ave., Cleveland 15, O.

T-527 Sodium Hydrosulfite. Literature and test samples are available on "T-C Hydro." Tennessee Corp., 617-629 Grant Bldg., Atlanta, Ga.

T-528 Ethanolamines. Lists application, chemical and physical properties. Nitrogen Division, Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-530 Ball Bearing Turn Table. Describes 48-inch steel turn table for mills. Birch Brothers, Inc., 32 Kent St., Somerville, Mass.

T-531 Rotary Dyeing Machine. For use in dyeing hosiery, hats, gloves, socks, etc. Turbo Machine Co., Lansdale, Pa.

T-532 Micro Switch For Wet Process. Advantages and applications in dyeing, bleaching, finishing. Micro Switch Div., Minneapolis-Honeywell Regulator Co., Freeport, Ill.

T-534 Dyeing and Finishing Machinery. Complete line presented in series of catalogs. Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

T-535 Dyeing, Bleaching and Drying Equipment. Complete line for cotton, wool and synthetics described. Color pictures. Morton Machine Works, 1718 3rd Ave., Columbus, Ga.

T-536 Napthol Ratios Slide Chart. Quickly and accurately enables operators to determine Napthol Ratios. Alliance Color & Chemical Co., 33 Ave. P, Newark 5, New Jersey.

T-537 "PCB" Rock Salt. Tells how product saves money, eliminates bad dyeing. Morton Salt Co, Industrial Division, 120 So. LaSalle St., Chicago 3, Ill.

T-538 Wool Oils. Describes influence of wool oils in producing quality yarns and fabrics. Procter & Gamble Dist. Co., Gwynne Bldg., Cincinnati, Ohio.

T-540 Penford Finishing Gums. Complete data, including physical properties. Penick & Ford Ltd., Inc., 420 Lexington Ave., New York 17, New York.

T-541 Regeneration Of Zeolite Water Softeners. Explains advantages of Lixate Process. International Salt Co., Scranton, Pennsylvania.

T-542 Dyeing Synthetic Fibers. Detailed analysis of methods and materials. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-543 Industrial Brushes. Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

T-544 Waste Heat Recovery Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

T-545 Washers For Scouring, Bleaching, Acidifying. Describes highcapacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-546 Naphthol for Lightfast Browns. Booklet describes new, straight, nonsubstantive naphthol, Naphthol As-BN, for the continuous naphtholation of cotton and rayon piece goods in the dyeing of economical, fast-to-light browns. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-547 Softener, Lubricant, Napping Aid. Technical information available on softener, lubricant and napping aid for natural and synthetic fibers, yarns and fabrics. Nopco Chemical Co., Harrison, N. J.

T-548 Handbook on Methocel. Gives technical information and use data on family of methylecellulose ethers called Methocel. Organic Chemicals Sales, The Dow Chemical Co., Midland, Mich.

T-549 Wall Charts For Handling, Testing H_2O_2 Two 16" x 21" wall charts available, one on handling and the other on testing H_2O_2. Becco Chemical Div., Food Machinery & Chemical Corp., Buffalo 7, N. Y.

T-550 Polyvinyl Acetate Emulsion. Bulletin contains a description of Celanese emulsions and cites advantages of Celanese polyvinyl acetate emulsions in textile finishing. Celanese Corp. of America, Plastics Div., 744 Broad St., Newark 2, N. J.

T-554 Instrument Catalog. Complete information on industrial instrument accessories and supplies. Includes specifications, parts numbers and prices. Catalog 500, Foxboro Co., Foxboro, Mass.

T-555 Drying Tumblers. Details on fast, efficient open-end tumblers. Huebsch Manufacturing Co., 3775 N. Holton St., Milwaukee 1, Wisconsin.

T-556 Hunter Dyeing Equipment. Describes fully with diagrams Hunter Model A Dye Becks, Hunter No/Lap Reels, Model S Dye Kettles, Open Width Dye Kettles, Sample Dye Kettles. James Hunter Machine Co., North Adams, Mass.

T-557 High Activity Catalyst. Technical bulletin describes new catalyst AC-6 which provides increased activity, excellent bath life, minimum odor formation, etc. Monsanto Chemical Co., Plastics Div., Springfield, Mass.

T-558 Cationic Dye Leveler. Bulletin TX-34 gives new information on dye leveler for acid colors on nylon tricot and wool through use of Nopco 1425-B. Nopco Chemical Co., Textile Chemicals Div., Harrison, N. J.

T-559 Flow Control Complete information on largest selection of values to handle flow control requirements. William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

T-560 Profitable Curing. Complete story on profit-making loop curers and roller curers. Proctor & Schwartz, Inc., Seventh and Tabor Rd., Philadelphia 20, Pa.

T-561 Pump Pourable Pastes. Bulletin tells how Moyno pumps can pump any textile liquid that can be forced through a pipe, even if highly viscous or corrosive. Robbins & Myers, Inc., Springfield, Ohio.

T-563 Polyethylene Finishing Agent. Booklet contains information needed to adopt Emulsifiable A-C polyethylene as a finishing agent to any particular process. Semet-Solvay Petrochemical Div., Allied Chemical Corp., 5th Floor T, Rector Street, New York 6, N. Y.

T-564 Hydrogen Peroxide Bleaching. Booklet discusses advantages, operating details and savings in chemical costs of Activated Hydrogen Peroxide Bleaching Process for Cotton. Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-566 Ethylex Gums. Brochure describes properties of hydroxy ethyl ether derivatives of corn starch. Applications of these noncongealing gums in warp sizing and finishing covered. A. E. Staley Mfg. Co., Box 151, Decatur, Ill.

T-567 Superlose and Ramalin Describes the physical and chemical properties possessed by these two principal components of potato starch. Colloid Dept., Stein, Hall & Co., Inc., 285 Madison Ave., New York 17, N. Y.

T-570 Carpet Dryers. Details, pictures, drawings on driven roll, conveyor, and tenter types. Andrews and Goodrich Div., 336 Adams St., Boston (Dorchester), Mass.

T-571 Chainless Mercerizing Machine. Two new bulletins provide complete information on the Benninger Chainless Mercerizing Machine for piece goods. H. W. Butterworth & Sons Co., Bethayres, Pa.

T-572 Dyeing Machinery for Every Purpose Illustrated literature available on complete line of automatically controlled machinery. Gaston County Dyeing Machine Co., Stanley, N. C.

T-573 Textile Finishing Machinery. Folder available from Marshall and Williams Corp. contains photographs of each piece of finishing equipment manufactured by the firm. Request from Marshall and William Corp., 46 Baker St., Providence, R. I.

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T-575 Rotary Unions and Traps. Complete details on various types of rotary unions and steam traps, including specifications, operating pressures, etc. Perfecting Service Co., 332 Atando Ave., Charlotte, N. C.

T-576 Yarn Preparation. Describes products for yarn preparation, printing, finishing. Polymer Industries, Springdale, Conn.

T-577 Stainless Dry Cans. Information on stainless steel, 75 psi, reverse dished head dry cans. Can be furnished Teflon-coated if desired. Sims Metal Works, West Point, Ga.

T-578 Color Sells—Yes. Bulletin No. 262 on lighting for critical viewing or color matching. Macbeth Daylighting Corp., Newburgh, N. Y.

fibers and yarns

T-601 Fortisan-36, New Textile Fiber. Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

T-602 Caprolan Nylon Heavy Yarns. Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

T-603 Rayon—Mile By Mile. Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

T-604 The Chemstrand Nylon Story. Describes the birth and growth of Chemstrand Nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

T-605 Color-Fast Fibers. Further information on "Coloray," Courtauld's solution dyed rayon staple which is a contribution to colorfastness in fabrics. Courtaulds (Alabama) Inc., 600 Fifth Ave., New York 20, N. Y.

T-606 "Dial-A-Fiber." Ingenious circular chart indicates properties and compatabilities of "Uvitex" for application on natural and synthetic fibers. Ciba Co., Inc., Technical Dept., 627 Greenwich St., New York 14, New York.

T-607 The Story On Lurex. Information on metallic yarns made with Mylar and how they are developed to broaden the scope of the tufted industry. Textile Fibers Dept., The Dow Chemical Co., James River Div., Williamsburg, Va.

T-608 Taslan Textured Yarns. Technical information on dyeing and finishing of new fabrics made with Taslan. E. I. du Pont de Nemours & Co., Wilmington 98, Delaware.

T-609 Processing Nylon Staple. Data sheet describes method of processing Du Pont 420 Nylon Staple in blends with cotton. Covers complete operation through sizing. Bulletin N-93, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

T-610 Aluminum Yarns. Folder available containing actual samples of vari-colored aluminum yarns. Reynolds Metals Co., Reynolds Metals Bldg., Richmond, Va.

T-611 Candlewick Tufting Yarns. In cotton, rayon, nylon and blends . . . a "put up" for every need. Candlewick Yarn Co., Dalton, Ga.

laboratory

T-701 Testing Instruments. Descriptions of 37 instruments for testing textiles. Custom Scientific Instruments, Inc., 541 Devon St., Kearny, N. J.

T-702—Metal Detector. Spot troublesome metal before it harms equipment or fabrics. Radio Corp. of America, Dept. S-271, Building 15-1, Camden, N. J.

T-703 Shadograph Weighing Devices. Pictures and information on various types of scales. Exact Weight Scale Co., Columbus 8, Ohio.

T-705 Strobotac. Measures speed of rotating, reciprocating or other cyclic motions. General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.

T-706 Yarn Count Scale. Data sheet tells how direct-reading instrument provides fast, accurate method of determining yarn number. Exact Weight Scale Co., Columbus 8, Ohio.

T-707 Maintenance Information for Scott Testers. Booklet contains maintenance data for calibration of Scott Testers, clamps for testers, gearbox lubrication, and recording. Scott Testers, Inc., Providence, R. I.

T-712 Automatic Moisture Control. Booklet tells how Hunter Electro-Psychrometers are used in measuring percentage of moisture in all classes of textiles, whether yarns or fabrics. Hunter Controls, Inc., Div., James Hunter Machine Co., North Adams, Mass.

services for management

T-801 Factoring Service. Details on advantages of factoring, including information on general banking and pension plans. Trust Company of Georgia, Atlanta, Ga.

T-802—Non-Woven Fabrics. Report includes how non-woven fabrics are made, machinery involved, sample fabrics. Textile Fibers Dept., E. I. du Pont re Nemours & Co., Inc., Wilmington 98, Del.

T-807 Group Insurance. Information on how textile group insurance can insure the happiness of your employees and make for a better running mill. Provident Life and Accident Insurance Co., Group Dept., Chattanooga, Tenn.

T-808 Factoring. Complete details on services offered as mill factors. L. F. Dommerich, 271 Madison Ave., New York, N. Y.

T-809 Move Key Men Quickly. Industrial airplanes help keep your key men from being stuck on one job at a time. Southern Airways Co., P. O. Box 718, Atlanta, Ga.

T-810 The Wonalancet Way is the title of an editorial booklet published five times a year dealing with current problems which appear worthwhile at the time they are written Write Wonalancet Company, 128 Burke St., Nashua, N. H.

T-811 Electrical Contracting. Details on services available to the textile industry. J. M. Clayton Co., 78 Simpson St., N.W., Atlanta 1, Ga.

T-812 Beechcrafts at Work. Booklet available from Southern Airways Company shows how Beechcraft executive airplanes can save executives time ond money. Write Southern Airways Co., P. O. Box 718, Atlanta, Ga.

T-818 Textile Engineering. Information on complete, integrated service covering every type of textile project. Robert & Co. Assoc., 96 Poplar St., N. W., Atlanta 3, Ga.

T-819 Organized Lubrication Pays. Planning book entitled "Management Practices that Control Costs via Organized Lubrication" shows how to effect savings in five areas of plant operation. Available from The Texas Co., 135 E. 42nd St., New York 17, N. Y.

T-821 Inventory Control. How a study of paperwork in one textile mill revealed that a daily report of inventory condition could be mechanically produced on existing business machines with a net direct payroll saving of more than $10,000 a year is reported in booklet available from Administrative Methods Dept., Werner Textile Consultants, 1470 Broadway, New York, N. Y.

plant operation

T-902 Belt Lacing Equipment. Includes prices, specifications, etc. Clipper Belt Lacer Co., Grand Rapids, Michigan.

T-903 "Motor Selector." How to select a-c motors for specific application. Bulletin B-2103. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

T-905 Rotary Pressure Joints. Details on self-lubricating, self-adjusting, self-aligning joints. The Johnson Corp., Three Rivers, Mich.

T-906 Servicing "One-Shot" Lubricators. Describes high capacity spring discharge piston pump lubricator. Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

T-907 Wrap Up Lint Problems. Automatic lint filter removes lint from air, winds it into disposable roll. Bulletin 234, American Air Filter Co., 275 Central Ave., Louisville 8, Ky.

T-908 Textile Motors. Bulletin describes complete line of textile motors. Diehl Mfg. Co., Finderne Plant, Somerville, N. J.

T-911 Leather Belting. Selection, installation, proper maintenance. Atlanta Belting Co., 508-510 Whitehall St., S. W., Atlanta, Ga.

T-912 Story of Nylon Bristle. Tells of discovery and production, with special attention to "Tynex," a form of nylon ideal for use in brushes. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

T-914 Industrial Greases. Describes multi-purpose lithium soap industrial greases. Sinclair Refining Co., 600 Fifth Ave., New York, New York.

(Continued on next page)

PAINT BULLETIN

FROM INDUSTRIAL FINISHES DIVISION
MINNESOTA PAINTS, INC.

SUBJECT: Machinery Enamel

No. 3 of a new, instructive series of Paint Bulletins. The information, compiled by the Industrial Division of Minnesota Paints, Inc. is the result of intensive research and extensive data collected from numerous successful applications.

Conditions in your plant govern selection of machinery paints. Quick-drying regular, epon and rubber base machinery enamels are available. However, it is good to be aware of the performance qualities of paints specially formulated to meet textile mill conditions. Here are some pertinent facts about modern textile machinery coatings:

UNDER SEVERE CONDITIONS of humidity, acid or alkali, it costs less in the long run to use a dependable brand of paint that will resist mildew, steam, rust and corrosion. Your machinery enamel should be a type that is easily cleaned, that resists fading, bleaching, yellowing. The paint must be resilient enough to withstand machine vibrations and stresses. And this flexible quality must last a long time. Some types of paints become brittle with age and exposure to light. When this happens, protection and beauty is lost. It will then, of course, deteriorate rapidly.

A PROVEN TEXTILE MACHINERY FINISH, widely used throughout the industry, is Minnlite Fumeproof Dado and Machinery Enamel. It is highly recommended for use on most machinery, including continuous dye ranges, washers, mercerizers, jay boxes, etc. This tough, rubber base finish is highly resistant to mildew, steam, rust, acids and chemicals. Properly applied with a rubber-base rust-inhibitive primer, it is an excellent retardant to corrosion. Only a mild solution of a common detergent, such as Cleanall, is necessary to keep the tight, non-porous coating bright and clean. Minnlite Fumeproof Enamel also has strong color retentivity, keeps its vital flexibility indefinitely.

COLOR ENGINEERING. Safety through color is made possible by Minnesota Paints' broad selection of standard machinery colors. Color engineering in your plant has the dual purpose of promoting maximum plant safety and efficiency, and reducing fatigue. Eight standard textile machinery colors are available in Minnesota Paints' Machinery Enamels along with specially designed "eye rest" colors. These colors harmonize with existing plant colors without detracting from the effectiveness of safety and danger zoning. Brighter warning colors are also available in Machinery Enamel for moving parts and for in-plant vehicles.

If the color or shade you have in mind isn't available in stock, Minnesota Paints can readily custom-blend it for you at the Atlanta plant.

Experts agree there is a *right* paint for every job . . . and in the long run, it costs you less to put the right paint on each surface.

Fill out and send us the coupon below for a FREE Paint Survey. One of our men with practical experience in the application of paints in the textile industry will survey your plant, at your convenience, and recommend the *right* paint for each of your particular needs. *There is absolutely no obligation for this service.* And it could bring you valuable returns in better plant appearance and in lower maintenance costs.

Free Paint Recommendation Survey

MINNESOTA PAINTS, INC.
1104 Third Street So. • Minneapolis, Minn.

Gentlemen: ☐ Please have one of your industrial paint experts call me to arrange for a FREE Paint Recommendation Survey of my plant.

☐ Please send me a free color card showing the exact shades available in Minnesota Machinery Enamel.

Name_____ Title_____

Company_____ Phone No._____

Address_____ City_____ State_____

Minnesota PAINTS

MINNESOTA PAINTS, INC.

PLANTS AT: Atlanta Minneapolis Ft. Wayne Dallas GENERAL OFFICES: 1101 Third Street South, Minneapolis, Minnesota

Automate your cotton looms by "weaving-from-a-cone"
with **UNIFIL**® *Loom Winders...*

You can weave higher quality cotton fabrics at lower cost per yard, by installing UNIFIL Loom Winders.

The UNIFIL Winder brings the entire process of filling preparation right to the loom. It automatically winds, loads the shuttle, strips and returns empty quills to the winder. Tension variation is held to a minimum . . . quill soilage and mixed fillings are virtually impossible! Savings in quill handling alone quickly pay for UNIFIL. And cloth quality is *automatically* better on every yard you run, because of better prepared filling and improved transfer conditions. Thousands of UNIFIL Winders are daily improving the weaving of filament and spun fabrics, as well as cotton.

Find out how UNIFIL Loom Winders can improve cotton weaving and profits in *your* mill. Ask your Universal Sales Engineer, or write Universal Winding Company, P. O. Box 1605, Providence 1, Rhode Island.

23.8.6

LEESONA

UNIVERSAL WINDING COMPANY

Boston • Philadelphia • Charlotte • Atlanta • Los Angeles • Montreal and Hamilton, Canada

PERSONAL NOTES

The American Thread Co. has appointed **David H. Fields** to the post of assistant director of research and development. He is headquartered at the firm's Willimantic, Conn., mills.

William A. Edwards has been placed in charge of the Bevelle plant of Avondale Mills in Alexander City, Ala. He has been succeeded as superintendent of Catherine Mills, Sylacauga, Ala., by **Alva W. Yates.**

Albert J. Bartson has announced his partial retirement from active participation in Albert J. Bartson, Inc., Midland Park, N. J., and will act only as a consultant in the future. Mr. Bartson was recently elected chairman of the board. At the same time, **Fred W. Thompson** was elected president, and **Robert W. Richards** was chosen treasurer.

Irving Shapiro has been elected executive vice-president and a director of Glenoit Mills, Inc., a wholly-owned subsidiary of Botany Mills, Inc. Glenoit manufactures and distributes pile fabrics.

Virgil H. Hampton has accepted a position as general superintendent of the Hamilton, Morris, Redfield, and Springdale plants of Cabin Crafts, Inc., Dalton, Ga. Mr. Hampton was formerly assistant manager of bleaching and finishing at the Fairfax (Ala.) Mill division of West Point Mfg. Co.

The Fairfax (Ala.) Mill division of West Point Manufacturing Co. has named **Robert E. Smith, Jr.,** assistant manager in charge of bleaching and finishing. **J. L. Lanier, Jr.,** succeeds Mr. Smith as assistant manager in charge of the grey mill. * * * **Sinclair Weeks,** formerly U. S. Secretary of Commerce, has been elected a member of West Point's board of directors. This is the second time Mr. Weeks has served in this capacity.

Wiscasset Mills Co., Albemarle, N. C., has named **Thomas R. Smith,** manager of the yarn dyeing department, and **J. L. Chivington,** manager of the knitting department, to the position of vice-presidents.

Charles P. Macaluso has joined the department of science and technology of the Wool Bureau, Inc. He was formerly manager of the quality con-

INDUSTRIAL ENGINEERS

• MODERNIZATION PROGRAMS • PLANT LAYOUTS
• MANAGEMENT PROBLEMS • WORK LOAD STUDIES
• COST REDUCTION REPORTS
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RALPH E. LOPER CO.
GREENVILLE, S. C., Dial CEdar 2-3868 • FALL RIVER, MASS., Dial OSborne 6-8261
Specializing in Textiles Since 1914

"What You Want When You Want It"

WONALANCET

Specialists in
Carding and Combing
of Cotton
and
Other Fibers

WONALANCET COMPANY
128 Burke Street, Nashua, New Hamp.
3240 Peachtree Road, N. E., Atlanta, Georgia

ONE COILER EXCELS!

McDONOUGH

There are more McDonough large coilers in use than any other make. Try one in your mill without obligation and learn why.

McDONOUGH POWER EQUIPMENT, INC.
McDonough, Georgia, U.S.A.

PERSONAL NOTES

trol department, wool division, Amerotron Corp.

Wyandotte Worsted Co., Waterville, Me., has elected **Thomas H. McGowan** president and treasurer, succeeding Arthur C. McGowan, Sr., deceased. **John H. McGowan** was elected vice-president, retaining the duties of general manager. **Arthur C. McGowan, Jr.,** secretary and assistant treasurer, was elected to the board to fill the vacancy created by his father's death.

Callaway Mills Co., LaGrange, Ga., has named **A. U. Priester, Jr.,** executive vice-president in general charge

Mr. Priester

of all operations. **P. N. Collier** has been elected vice-president in charge of manufacturing.

George Dorn has been transferred to McCormick (S. C.) Mill as technical superintendent. Succeeding him as technical superintendent at the Johnston (S. C.) Mill is **Hunter Ackis.** Also at Johnston, **Fred Hill** has been made overseer of the weave room. **William T. Mundy** has been transferred to Johnston as supervisor of industrial engineering. He previously held the same position with McCormick Mill.

Roxbury Carpet Co. has promoted **Philip S. de Gozzaldi** to the position of manager of marketing research. He maintains headquarters in New York City and Worcester, Mass.

John Tenwolde has accepted a position with Sagamore Manufacturing Co.'s Border City division, Fall River, Mass. He will work in a new post in developing new fabrics of cotton and synthetic yarns in dobby and fancy patterns. Mr. Tenwolde had been associated with Gera Corp.

The South Carolina Textile Manufacturers Association has named **Frederick B. Dent** to fill the unexpired term of the late P. S. Bailey as head of the organization. Mr. Dent is president of Mayfair Mills, Arcadia, S. C.

Spindale (N. C.) Mills, Inc., has awarded the Foreman of the Year trophy to **Garland Mosteller,** Spindale designer. He was chosen by members of the Foreman's Club for his service to the company and his fellow workers.

Allan J. Nelson has retired from his position as mill superintendent of the Springfield (Tenn.) Woolen Mills Co.

Spuncraft, Inc., New York, N. Y., has appointed **Irving Magaram** vice-president. He will continue to serve as production department head and will act as assistant to the president.

J. P. Stevens & Co., Inc., has appointed **Edward H. Stall** superintendent of the Apalache plant, Greer, S. C. He succeeds **Carl McCombs,** who transferred to the Victor plant, also in Greer.

W. Arlington Kerstetter has been named vice-president and general manager of Sunbury (Pa.) Textile Mills. **Sydney Jackson** assumes Mr. Kerstetter's former title of secretary.

Dr. Joseph B. Quig, associate professor of chemistry at Lowell Technological Institute, has been elected to Fellowship in the Textile Institute.

James W. Bamford, vice-president and woolen and worsted director of Textile Workers Union of America, has retired. He has been affiliated with the Union since 1924.

The Vinyl Fabrics Institute has elected **Jules D. Lippmann,** general manager of the Textileather division of General Tire & Rubber Co., president. **C. Gordon Jelliffe** of Columbus (O.) Coated Fabrics Corp. was re-elected first vice-president, and **Paul Howard** of Weymouth Art Leather Co., South Braintree, Mass., was re-elected second vice-president. **Paul F. Johnson** continues as executive secretary.

The board of directors of the National Association of Manufacturers for 1959 includes the following textile men: **Hugh M. Comer,** board chairman, Avondale Mills, Sylacauga, Ala.; **E. T. Barwick,** president, E. T. Barwick Mills, Chamblee, Ga.; and **Gordon Hanes,** president, Hanes Hosiery Mills, Winston-Salem, N. C.

Dr. Hamburger
Fabric Research

Mr. Waller
Celanese Corp.

The American Society for Testing Materials has chosen **Dr. Walter J. Hamburger** to receive the 1959 Harold De Witt Smith Memorial Medal from Committee D-13. The award will be presented March 19 in New York City at the committee's spring meeting.

Celanese Corp. of America has appointed **Thomas S. Waller** plant manager of its spun yarn plant in Burlington, N. C. He succeeds **Frank B. Cameron** who is assigned as production manager of the textile fiber plant in Cumberland, Md.

Cheraw (S. C.) Weaving Mill, Inc., has named **Hy Goldstein** vice-president.

Massachusetts Mohair Plush Co., Inc., has elected **Alexander J. Maino** vice-president in charge of the southern division. Mr. Maino maintains headquarters at Kings Mountain, N. C., and in New Bedford, Mass.

The Textile Section of the New York Board of Trade has re-elected **Ralph J. Bachenheimer** of Iselin-Jefferson Co., Inc., chairman. **William H. Dribben,** assistant vice-president of Cone Mills, Inc., was elected vice-chairman, and **John M. Bendheim,** vice-president and director of M. Lowenstein & Sons, Inc., was elected treasurer.

H. K. McLean, president of Thor Mills, Ltd., Granby, Que., has been elected a director and vice-president of Paton Manufacturing Co., filling a vacancy created by the resignation of **J. V. R. Porteous.** At the same time, **R. Neill,** manager of Paton's Sherbrooke plant, received the new title of general manager.

Paul Knitting Mills, Inc., Pulaski, Va., has named **Norman K. Coker** president, succeeding **George L. Chapman** who has resigned. At the same time, **Robert M. Lynch** was elected vice-president in charge of production, and **Warren H. Kinne** was chosen vice-president of sales.

(Continued on page 182)

LASTS 3 TIMES LONGER!

NEW DU PONT TEXTILE FLOOR FINISH

Resists chemicals, dirt, moisture, heat!

This weave room floor was redone with new Du Pont Textile Floor Finish ten months before photo was taken. Note the very high gloss, after severe abuse of heavy traffic and moisture. Regular sweeping has polished the finish so that it shines even more than when first finished.

Tests prove that this new oil-free clear floor finish has wearability and gloss retention three times greater than the finest varnishes. It requires dramatically less maintenance in textile plants—sticky accumulations of lint and starch don't stick to it! Under development both in Europe and U. S. for nine years, Du Pont's new Textile Floor Finish resists all kinds of wear. Hard, yet flexible, it resists corrosion, chemicals, solvents, water, abrasion, traffic, impact and high temperatures. It's ideal for concrete or wood floors. For complete information call your Du Pont representative or mail the coupon now!

THE PROTECTION LASTS WITH DU PONT TEXTILE FLOOR FINISH

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

E. I. du Pont de Nemours & Co. (Inc.)
Finishes Division, Dept. TI-93
Wilmington 98, Delaware

Gentlemen: Please send me, without obligation, technical information on the new Du Pont Textile Floor Finish.

Name _____ *Title* _____

Company _____

Address _____

ARNEL'S "STAMPS" OF CONSUMER APPROVAL

Consumer acceptance of Arnel triacetate works for you just as resultfully as you work with Arnel. You know Arnel for its ease of processing in the mill. The consumer knows Arnel for its ease-of-care. You know Arnel can be handled on all standard mill equipment. Mr. and Mrs. Consumer know that properly constructed Arnel fabrics offer both beauty and performance.

You see one side of Arnel—consumers the other. Let's consider MACHINE WASHABILITY.

To the consumer:

1. Almost all properly constructed fabrics containing 50% or more Arnel triacetate are completely machine washable.
2. *No* special care is necessary as regards the use of a detergent in laundering Arnel fabrics.
3. All 100% Arnel fabrics are unaffected by bleaches used in ordinary household or commercial laundry procedure.
4. All fabrics carrying the official Arnel symbol have been pretested for performance claimed—including machine washability. (Tests are conducted free of charge by the Celanese Corporation of America.)

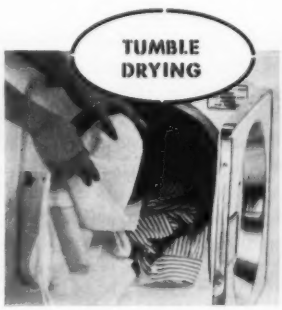
To take advantage of the great consumer acceptance of Arnel, let Celanese work with you to develop new constructions in Arnel fabrics. Booklets 13A and 14A, containing the important technical procedure and facts about Arnel, are available by writing Celanese Corporation of America, Box 1414, Charlotte, N.C.

Celanese® Arnel®

District Sales Offices:
180 Madison Ave., New York 16, N.Y.
Room 10-141 Merchandise Mart, Chicago 54, Ill.
P. O. Box 1414, Charlotte 1, N. C.
200 Boylston St., Chestnut Hill 67, Mass.
3179 Maple Drive N. E., Atlanta 5, Ga.

Export Sales:
Amcel Co., Inc., and Pan Amcel Co., Inc.
180 Madison Ave., New York 16, N.Y.

In Canada:
Chemcel Fibres Limited
1600 Dorchester Street West, Montreal, Quebec



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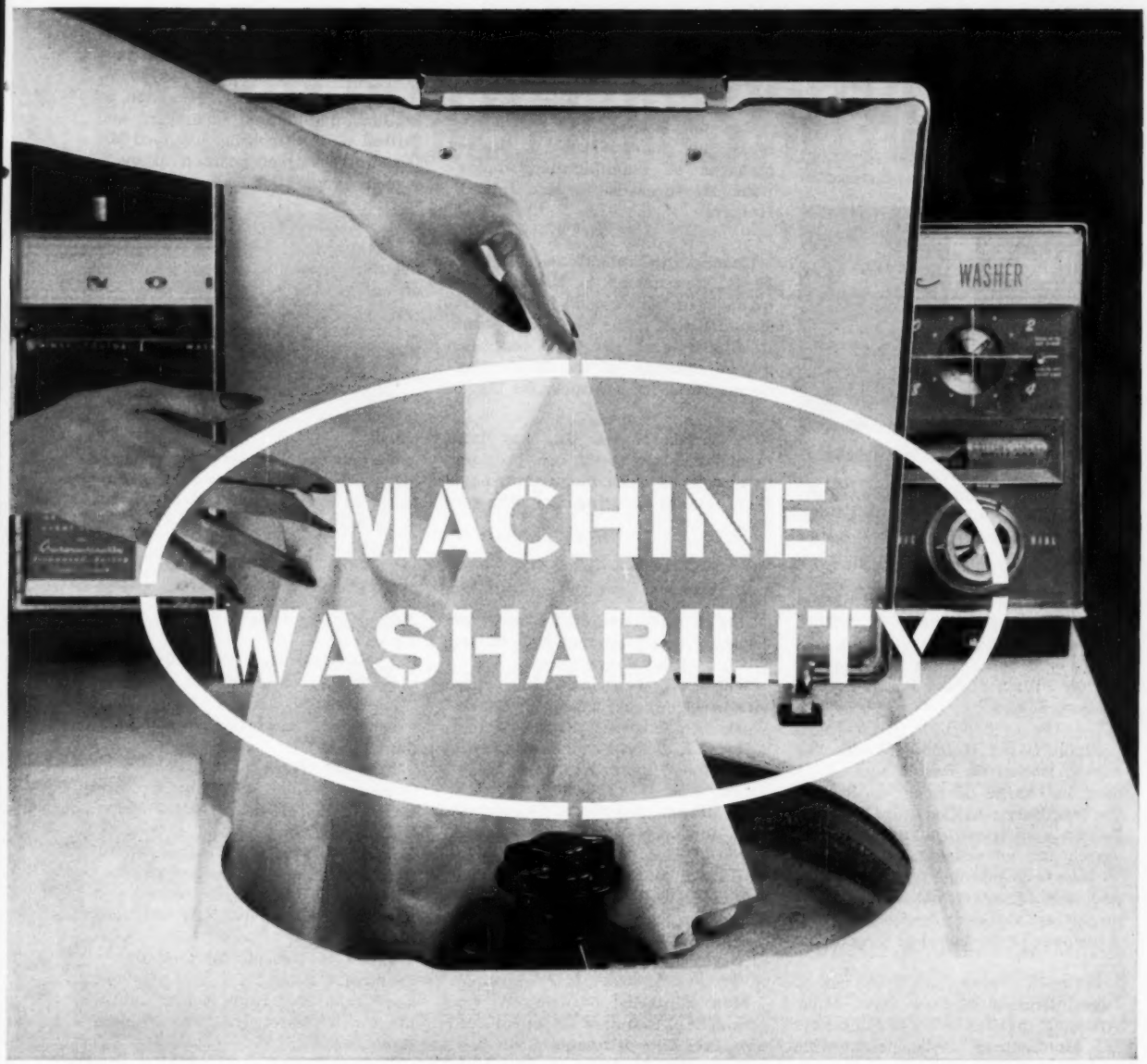


#1 in a series of ads reviewing the "reasons-why" for the consumer *acceptance of Arnel.*

ARNEL*

*This is the official Arnel symbol—evidence that this fabric of this new triacetate fiber has been pre-tested for performance claimed.

Celanese contemporary fiber

PERSONAL NOTES

(*Continued from page 178*)

Chicopee Mills, Inc., has promoted **James J. Bates** to product director in

Mr. Bates

Mr. Getman

the company's Lumite division. **Burrill M. Getman, Jr.,** succeeds Mr. Bates as assistant product director of finished goods in the cotton division.

Riegel Textile Corp. has named **Adrian N. Stuart** overseer of vat dye at the Ware Shoals, S. C., plant. Mr. Stuart was formerly at The Springs Cotton Mills Finishing Plant, Grace's Station, S. C.

Ripon (Wis.) Knitting Works has named **Robert G. Rashid** vice-president in charge of sales, succeeding the late Harry A. Cody, Jr. **Floyd C. Burton** was named manager of research and advertising, and **Edward V. Roth** was promoted to the post of assistant treasurer. **A. J. Novitske,** production vice-president, was elected a member of the board of directors.

Irvin L. Payne has been named superintendent of Dan River Mills' Alabama division with headquarters in Montgomery, Ala., succeeding **Raymond C. Gourley** who has been appointed staff superintendent with offices at Danville, Va.

Excelsior Mills, Inc., Union, S. C., has announced the following supervisory changes: **Frank A. Floyd, Jr.,** to product manager; **Fred Williams** to production control manager; **James Herbert Riley, Jr.,** to general office manager.

Charles E. Coleman has been made assistant supervisor in the preparation department at Union Bleachery, Greenville, S. C., a division of Cone Mills Corp. * * * **Roy L. Aiken** has become plant engineer of Union Bleachery. At the same time, **Jack Smith** was appointed purchasing agent and **Larry Poston** was named office manager. * * * The Finishing Department of Cone's Proximity Print Works has promoted **Roy T. Way** and **John B. Chrismon** to supervisory positions in the department.

Carleton Woolen Mills, Rochdale, Mass., has named **Peter J. Stalker** manager of manufacturing operations. He succeeds the late John P. Hunter.

Chadbourn-Gotham, Inc., Charlotte, N. C., has named **F. E. Bobo, Jr.,** manager of the women's hosiery division. He will make his headquarters in Charlotte. **F. B. Cape** has been named manager of the firm's Gaybourn Mills, Inc., Gainesville, Ga.

P. Frank Hanes, Jr., has been named assistant to the vice-president in charge of cloth manufacturing at P. H. Hanes Knitting Co., Winston-Salem, N. C.

Hatch Mill, Columbus, N. C., has announced the promotion of **Christopher C. Hindman, III,** to the post of production manager. **George A. Hemphill** succeeds Mr. Hindman as production planning manager, and **Clifton W. Holbrook** has assumed Mr. Hemphill's former position as overseer in preparation.

Harry Eldridge has resigned from F. C. Huyck & Sons for reasons of health. He was chairman of the board and a director.

La France Industries has elected **Kendall T. Greenwood** a vice-president. He retains his post as vice-president of Pendleton (S. C.) Manufacturing Co., a La France subsidiary.

Herman L. Weisler has resigned his position as vice-president and director of operations for Native Laces & Textiles, Inc., New York City.

OBITUARIES

Roy H. Anderson, 61, treasurer and assistant general manager of Peerless Woolen Mills, Rossville, Ga.

Walter C. Brundage, 75, retired vice-president of Lyons Piece Dye Works, Ridgewood, N. J.

Harry A. Cody, 47, vice-president of sales for Ripon Knitting Works, Ripon, Wis.

G. Robert Dodson, 55, vice-president and treasurer of Jantzen, Inc., Portland, Ore.

Ubald E. Dubois, retired sales engineer of Saco-Lowell Shops, Boston, Mass.

Murray Edelman, 55, vice-president of Barclay Knitwear Co., New York, N. Y.

Max Einstein, 64, retired vice-president of Standard Chemical Products, Inc., Greensboro, N. C.

Frederick C. Fletcher, 85, former president of Pocasset Worsted Co., Brookline, Mass.

George W. Herrick, Jr., 64, a director and retired secretary-treasurer of Aberfoyle Mfg. Co., Largo, Fla.

M. C. Hobbs, 63, long-time textile executive, Chestnut Hill, Mass.

Ralph Hodnett, 63, chief accountant of West Point Manufacturing Co., West Point, Ga.

John J. Hosey, 68, president of Energetic Worsted Corp., Bridgeport, Pa.

John T. Hunter, 63, superintendent of Carleton Woolen Mills, Inc., Rochdale, Mass.

Charles Levy, 73, production manager of Herbert Mills, Inc., and Bobbie Sportswear, Marion, S. C.

George W. Little, 47, general manager of the Hartsville plant of USF Aspinook Finishing Div., Gera Corp., Hartsville, S. C.

Andrew W. Macy, 71, retired textile official, New Bedford, Mass.

Edward McGuckin, 68, retired woolen mill superintendent, Philadelphia, Pa.

Andrew Melvin, 54, executive of Gastonia Comber Needling Co. and Gastonia Textile Sheet Metal Works, Gastonia, N. C.

Oscar E. Merkel, 82, president of Orange Knitting Mills, Orange, Va.

Joseph D. Murray, 75, retired textile mill executive, New Bedford, Mass.

Frank S. Nelson, 79, president of Frank S. Nelson & Co., and president and treasurer of Hugh Nelson Columbia Carpet Mills, Inc., Philadelphia, Pa.

Walter M. Schwartz, 81, honorary chairman of the board of Proctor & Schwartz, Inc., Philadelphia, Pa.

John Snoddy, Sr., 75, retired textile mill official, Marion, N. C.

Arthur L. Snow, 86, former superintendent of Esmond Mills, Providence, R. I.

Roland V. Thomas, 76, retired vice-president and director of the general line division, Chicopee Mills, Inc., New Brunswick, N. J.

Ira J. Wagner, 54, president of Crown Knitting Mills, Inc., Mohrsville, Pa.

Herman Weisfeld, head of Burton Knitwear Co., Philadelphia, Pa.

C. J. Weidmann, 59, a vice-president of Raeford Worsted Corp., New York, N. Y.

Harold Wollner, 53, president of Wollun Products Corp., Atlanta, Ga.

New Fundamental Chemical Discovery Creates A

BETTER SIZE FOR SYNTHETICS

New noncongealing Mira-Film Acetate Gum—developed especially for synthetics—gives noticeably superior adhesion. Forms clear, tough, flexible film that reduces warp stops, shedding, fuzz balls. As much as 2% better weaving efficiency demonstrated in actual mill tests!

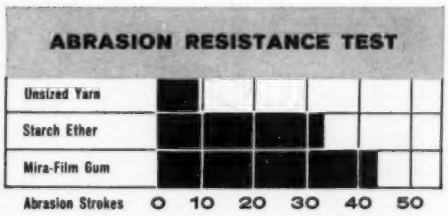
Now, after over two years of intensive research, the A. E. Staley Mfg. Co. announces a new concept in the sizing of acetate, viscose, and other man-made fibers—through the use of Mira-Film Acetate Gum. Made by an exclusive process, so unique that a basic process patent has been applied for, Mira-Film is available in a *complete* range of viscosities.*

Mira-Film is particularly outstanding in applications with spun synthetics and their blends. For example, its chemical affinity for acetate yarns results in noticeably superior adhesion. And Mira-Film forms a tough, flexible film with increased abrasion resistance. Mill tests on a 90/10 Viscose/Acetate blend produced a 1% to 2% improvement in weaving efficiency.

More effective protection greatly improves weaving efficiency. Reduces breakage, shedding, fuzz balls and matting on drop wires . . . virtually eliminates thin spots. Cuts costly down-time.

Staley's exclusive development sets a new high, too, in uniformity . . . permits a degree of process control heretofore unattainable. Thus, Mira-Film Gum has minimum variation in viscosity or other physical properties, from bag to bag or from carload to carload.

Why not get all the facts about new Mira-Film Gum? For further information, see your Staley Textile Representative at the branch office nearest you or write today to: A. E. Staley Mfg. Co., Decatur, Ill.



*Mira-Film is one of a series of new products with a broad spectrum of characteristics, made possible by this new Staley development.

Compare The New Mira-Film Gum With Your Present Starch Size!

1. Completely noncongealing
2. Lower pasting temperature
3. Can be used at lower size box temperatures (120° F)
4. Paste is long and stringy
5. Faster cooking—only 30 minutes required at normal concentration
6. Requires wax additive only
7. Can be made in a full range of viscosities

A. E. STALEY MFG. CO., DECATUR, ILL.

Branch Offices: Atlanta • Boston • Chicago • Cleveland • Kansas City
New York • Philadelphia • San Francisco • St. Louis

MILL NOTES

A complete textiles testing laboratory has been installed in the Kenosha, Wis., plant of **Cooper's Inc.** Newly-installed testing equipment enables the firm to perform quality and wear tests on any garment or fabric.

An agreement has been made by **Avalon Fabrics, Ltd.**, Stratford, Ont., Canada, to join with **Collins & Aikman of Canada, Ltd.**, and after completion of the transaction will continue as Avalon Fabrics, Ltd. Hans Buscher will continue as vice-president and managing director of Avalon. Increased production at both plants is anticipated.

Jeannette Hosiery Mills, Inc., has ceased operations and has sold its building in Elkins Park, Pa., to the county for warehousing purposes.

Diamond Mills Corp. has opened a new seamless knitting mill in Wilmington, N. C., to be known as **Hanover Mills.** The facility will produce fine nylons and leotard tights.

Huntley Knitting Mills, Charlotte, N. C., has acquired equipment from **Randon Knitwear, Inc.**, Graham, N. C. Included are multi-section full-fashioned units, a battery of V-bed flat machines, and looping and cup seaming equipment, increasing Huntley's capacity to 1200 dozens of full-fashioned sweaters weekly.

A new football stadium will be built by Callaway Community Foundation on the site of the present Callaway Stadium in LaGrange, Ga. **Callaway Mills Co.** will operate and maintain the new stadium, which will be available free of charge to LaGrange High School and Troup High School.

Employees of the grey mill, Trion, Ga., division of **Riegel Textile Corp.** recently completed two million man-hours without a disabling injury. Awards were presented to the weaving department acknowledging one million man-hours of work without a disabling injury, to the cloth room for three years without a disabling injury, and to the spinning department for one million man-hours without a lost-time accident.

Wamsutta Mills has closed its plant in New Bedford, Mass., and has moved some of its machinery to Lyman, S. C., where production and finishing of sheets, pillow cases, and fabrics has been underway for the past two years.

West Point (Ga.) Manufacturing Co. has announced development of a new fabric blending Orlon, nylon, and cotton to make wash-and-wear uniforms and men's slacks. Called "Tri-Fi," the fabric is said to provide automatic wash-and-wear performance in a heavy-duty fabric with the appearance and feel of worsted.

Wilshire Knitting Mills has moved into new quarters at 426 E. Allegheny Ave., Philadelphia, Pa. The firm has signed a five-year lease for a total of 16,700 sq ft on two floors at that location.

A permit to erect a building in Thomasville, N. C., has been granted to **Singer Hosiery Mills, Inc.,** High Point, N. C. Plans call for completion of the building by early spring. Approximately 125 persons will be employed in the new unit.

A trucking terminal in Greenville, S. C., has been purchased by **J. P. Stevens & Co., Inc.** The firm has moved the operation of its Greenville trucking terminal to the new White Horse Rd. location.

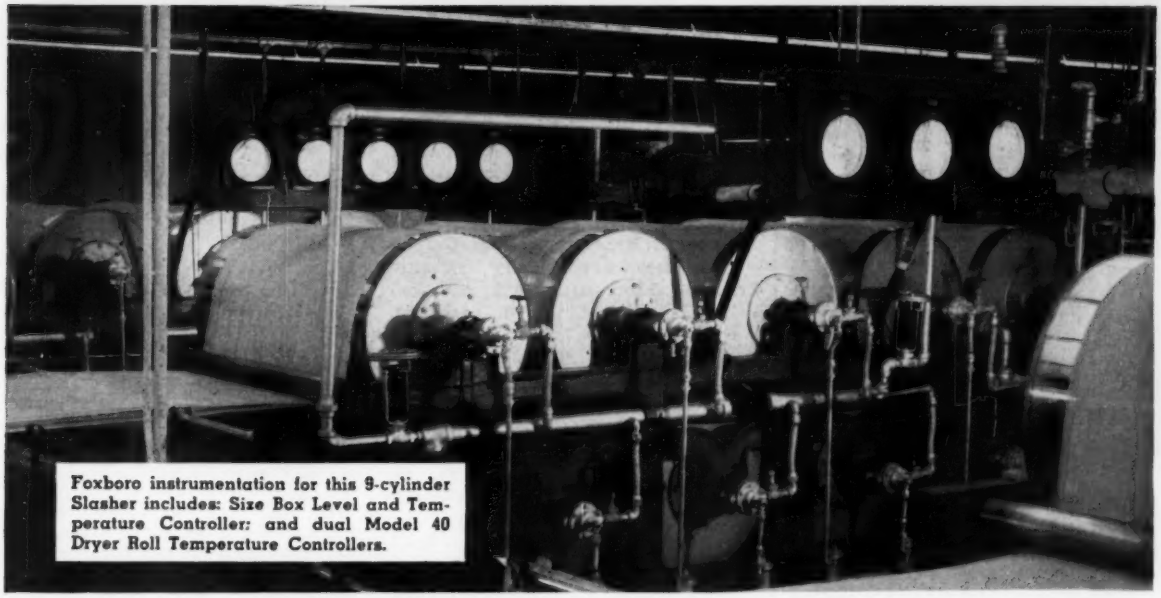
Approximately 2,000 houses, located at various plants of **Abney Mills** are being offered for sale to employees.

Agawam Dye Works, Inc., Lawrence, Mass., has completed installation of additional machinery and equipment which will more than double the firm's capacity for dyeing and processing tow.

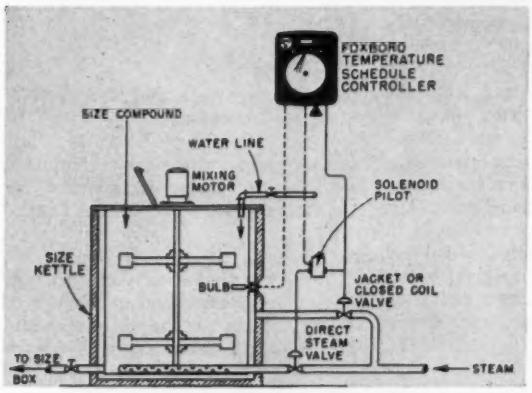
An addition is being constructed at the Jefferson, Wis., plant of Borg Fabric Division of **Amphenol-Borg**

BIBB MANUFACTURING CO., Macon, Ga., won first award in the soft goods textile division at the third annual competition of The National Flexible Packaging Association. A picture of Bibb's winning entry appeared on page 61, TI for December. From left to right, G. B. Barnwell, senior vice-president, and Robert Train, president, of Bibb; Bill Campbell, sales representative, and Price Gwyn, sales manager, Package Products Co., Charlotte, N. C., the firm that designed and printed the Bibb sheet package.

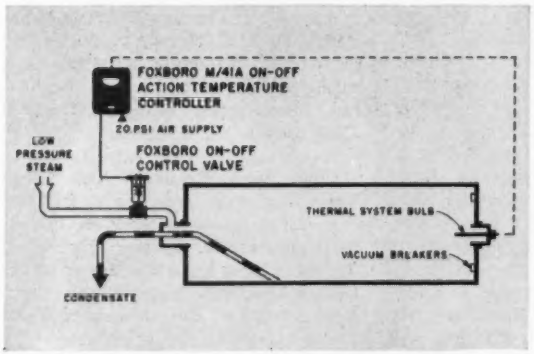
FOXBORO AUTOMATES THE SLASHER ROOM!



Foxboro instrumentation for this 9-cylinder Slasher includes: Size Box Level and Temperature Controller; and dual Model 40 Dryer Roll Temperature Controllers.



Foxboro Dual-Purpose Size-Kettle Control



Foxboro On-Off Control System for Dryer Rolls

complete control system:

- **cooks — stores size at proper temperatures — automatically**
- **holds dryer roll temperatures constant — automatically**
- **maintains pneumatic loading of squeeze rolls — automatically**

From size box to dryer roll you can depend on Foxboro control to increase the efficiency of your Slasher operation.

Take Foxboro's Dual-Purpose Size-Kettle Temperature Schedule Controller, for example. This exclusive instrument controls the temperature of BOTH size cooking and storage — with direct steam and jacket heating. Temperature shifts are automatic — no hazards of boil-over. And size dilution is completely eliminated — regardless of storage time.

Or take Foxboro Dryer Roll Temperature Control. This simple, on-off system developed by Foxboro eliminates compressed air purge in the removal of steam condensate . . . even as low as 140°F!

And for over-all Slasher Room efficiency, don't overlook size box level control, viscosity recording, and pneumatic squeeze roll loading. These, too, are Foxboro-engineered to improve yarn quality . . . automatically. Write today for full details. **The Foxboro Company, 483 Neponset Ave., Foxboro, Mass., U.S.A.**

FOXBORO **SLASHER ROOM CONTROL**

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PROTECTION
against FIRES and
MACHINERY DAMAGE!

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HI-POWR
permanent non-electric
MAGNETIC HUMPS*

Two powerful magnets in *one* highly efficient enclosed unit! For removal of tramp iron from pneumatic lines; offers maximum protection against metal damage to expensive equipment such as metallic clothing on garnett cylinders. Highly effective against tramp-iron-caused fires in opening rooms, etc. Increases production, reduces downtime. *U.S. Pat. No. 2,612,268.

COMPLETELY NON-ELECTRIC, SELF-CONTAINED • NO OPERATING OR MAINTENANCE COSTS • FULLY ENCLOSED UNIT • QUICKLY AND EASILY INSTALLED IN VERTICAL OR HORIZONTAL POSITION • MAGNETIC STRENGTH GUARANTEED INDEFINITELY • PAYS FOR ITSELF MANY TIMES OVER BY PREVENTING FIRES AND MACHINERY DAMAGE.

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ERIEZ

MILL NOTES

Corp., which is scheduled for completion in April. New equipment has been purchased and modernization of existing facilities at both the Jefferson and Delavan, Wis., plants is scheduled for early completion, increasing productive capacity by about 20 per cent.

Joseph Bancroft & Sons Co. has established a subsidiary company, Joseph Bancroft & Sons, A. G., in Zurich, Switzerland. The new firm, with offices at 272 Schaffhauserstrasse, will be headed by H. J. E. van Heek, manager, and Ernest Lueckel, assistant manager.

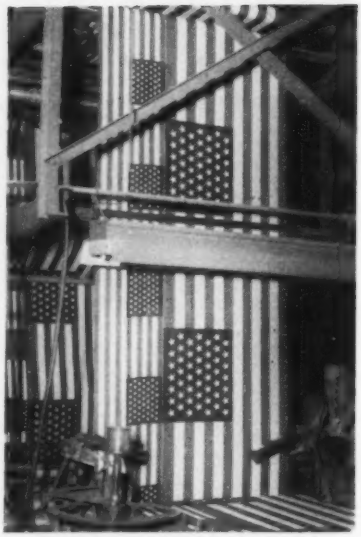
Controlling interest of the **H. E. Bradford Co.,** Bennington, Vt., has been purchased by the **Norweigian American Knitting Mills.** The two firms will merge operations as **Bradford Norak Co.**

Cabin Crafts, Inc., Dalton, Ga., has completed a licensing agreement with **Harding Carpets, Ltd.,** Brantford, Ont., Canada. Under terms of the agreement, Cabin Crafts will make available to Harding, which until now has specialized in woven goods, technical know-how in tufting operations, as well as patents held on machinery developed by the licensing firm. Approximately the same terms apply in the agreement recently completed with **Gamlestadens Fabrikers Aktiebolag** of Goteborg, Sweden, a division of the giant Svenska Kullager Fabrikerna.

More than 100 employees of Calhoun Mills, a member of the **Burlington Industries, Inc.,** group, have purchased the homes in which they were living near Calhoun Falls, S. C. The property was formerly owned by the firm.

The Greenwich Printing & Dyeing Co. plant in East Greenwich, R. I., has been re-opened by **Calvine Mills, Inc.** The plant had been closed since 1957.

A building formerly used as a textile mill at Waxhaw, N. C., is being expanded to 50,000 sq ft and will house the operation of **Filatex Corp.,** formerly in Roanoke, Va. Products of the plant will be used in making elastic yarns for men's and boys' hosiery, surgical stockings, foundation garments, etc. The operation is headed by Herbert Simpson, president; George Wells and Melvin Coleman, vice-presidents.



Pictured above is the first order of brand new U. S. flags with 49 stars being run on the frames just prior to finishing at THE ROCK HILL (S. C.) PRINTING & FINISHING CO. One of the first to receive orders for the printing of the new flags, this firm is believed to be the first to get into production and distribution. To date, more than two million flags have been processed here.

Additional tufted manufacturing facilities are under construction for the **Georgia Rug Mill** plant at Lyerly, Ga.

Fabrics with raised jacquard patterns have been added to the line of elastic fabrics for the swimwear and girdle fields produced by **Lawson Products,** Pawtucket, R. I.

An expansion program has been completed by **Huntley Knitting Mills,** Charlotte, N. C. Weekly production of ladies' full-fashioned sweaters and men's full-fashioned sweater-shirts has been upped to approximately 1,200 dozens.

Canterbury Knitters, Ltd., New York City, has formed a subsidiary corporation in Jamaica, West Indies, to manufacture knitted garments. The new firm, known as **Stony Mills, Ltd.,** will operate under the Jamaica Export Industry Encouragement Law.

The plant and warehouses formerly occupied in Douglasville, Ga., by Glendale Mills, Spartanburg, S. C., have been leased by **Clover Mills.** The latter mill has consolidated its operations in the new location, where capacity is more than doubled. Plans

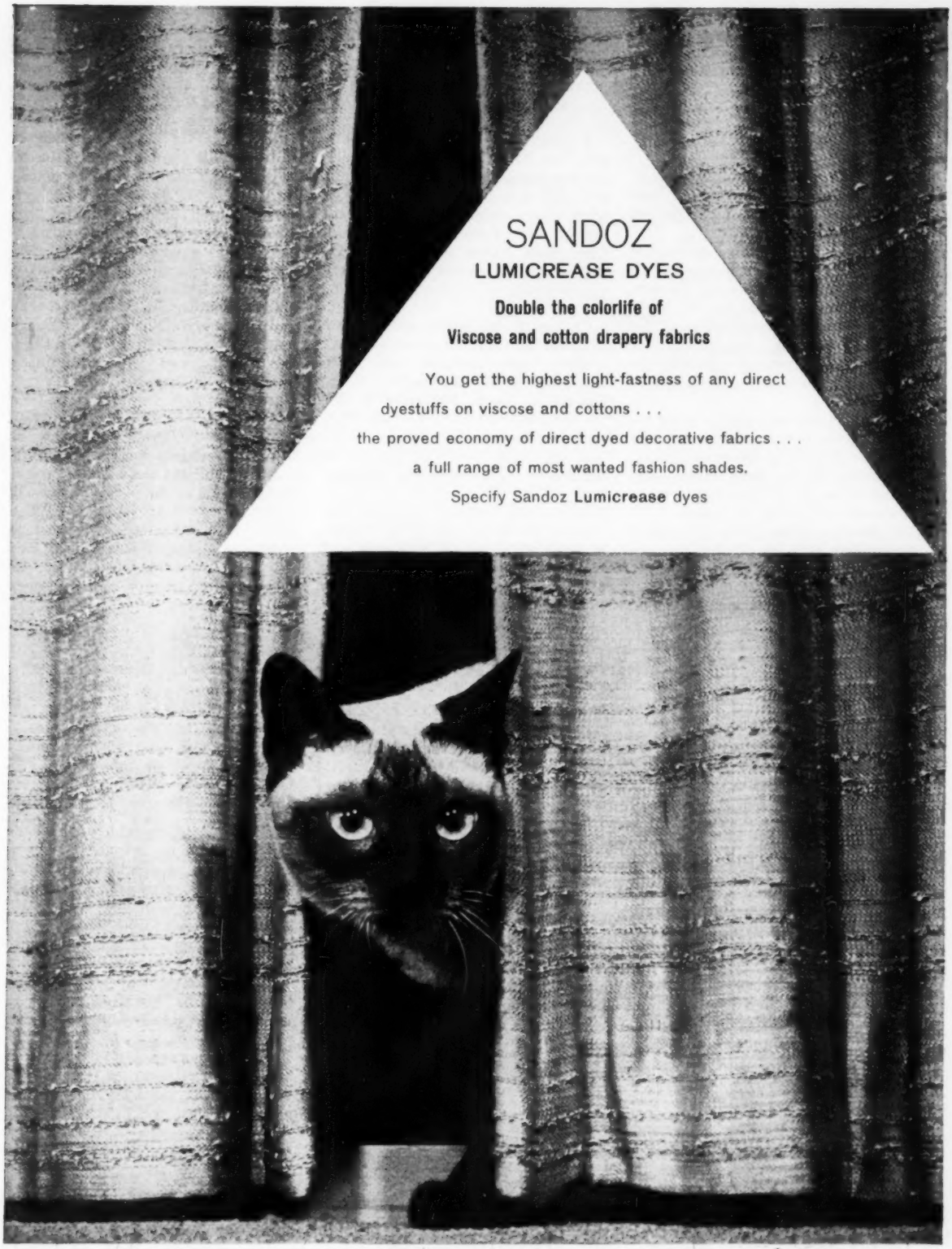

SANDOZ
LUMICREASE DYES
Double the colorlife of
Viscose and cotton drapery fabrics
You get the highest light-fastness of any direct
dyestuffs on viscose and cottons . . .
the proved economy of direct dyed decorative fabrics . . .
a full range of most wanted fashion shades.
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Photo by Walter Chandoha

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MILL NOTES

call for additional machinery to be in operation early in the year.

J. M. Hammerman, Inc., Los Angeles, Calif., has purchased 24 new seamless two-feed knitting machines.

A four-story building, containing 288,000 sq ft of space is planned as an addition to the bleachery at **Cannon Mills** plant No. 1, Kannapolis, N. C. Expansion and rearrangement of the present finishing department is planned, along with the installation of a heat reclamation system.

A new bleaching range is being installed in the preparation department at Union Bleachery, Greenville, S. C., a member of the **Cone Mills Corp.** organization. It is scheduled to be in operation by the end of March. * * * The houses in the Union Bleachery community will be offered for sale in the near future.

Duskin Manufacturing Co., San Francisco, Cal., has expanded its production into the manufacture of knitted yardgoods. The product is promoted under the Francescan Fabrics label.

A new firm, **Kent Avery & Co., Inc.,** has been formed to style and produce woolens and worsteds for the women's coat, suit, dress, and sportswear trades. Offices and showrooms are at 1407 Broadway, New York City. Kent Avery is president and Richard J. Dalessandro is secretary and in charge of production.

Charles E. McCarthy and William J. Leath have formed a new women's hosiery manufacturing firm with headquarters at Burlington, N. C. Known as **Leath, McCarthy & Co.,** the company has opened a New York sales office in the Empire State Building and has two plants in Burlington for knitting and finishing.

A worsted yarn mill will be constructed in Sumter, S. C., by **Mackie Worsted Mills, Inc.,** on a 10-acre tract to be purchased from the city. The new firm will have 25,000 sq ft of floor space and expects to begin operations with an initial employment of 110. The plant will be constructed with a view to future expansion.

Philwick Textiles Co. has exercised its option and has signed papers for the purchase of the former **Gilbert Knitting Mill** plant in Fort Plain, N. Y. A number of more modern textile machines have been installed and modernization of the building will begin as soon as weather permits.

A new corporation, **Security Mills of Canada, Ltd.,** has been formed by Security Mills, Inc., in Montreal, Canada. Manufacturing facilities are in Dunnville, Ont. The firm will style, manufacture, and distribute knitted fabrics in the Canadian market.

A $1 million addition to the Clearwater (S. C.) Finishing Plant of **United Merchants & Manufacturers, Inc.,** is scheduled for completion before the end of the year. The 24,332 sq ft addition brings the total floor space to 600,000 sq ft and will house part of the bleach house and the finishing operation. New machinery will be purchased and some old machinery will be relocated.

The DINKLER-TUTWILER

The ST. CHARLES

The DINKLER-ANDREW JACKSON

The DINKLER PLAZA

The DINKLER-JEFFERSON DAVIS

HOTELS
THE DINKLER PLAZA
Atlanta
THE DINKLER-TUTWILER
Birmingham
THE DINKLER-JEFFERSON DAVIS
Montgomery
THE DINKLER-ANDREW JACKSON
Nashville
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The LUAU

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The JAMAICAN

Retirement plan

(from page 126)

sion plan more desirable because the benefits are more definite. However, it should not be overlooked that the profit-sharing retirement plan in effect makes all employees "partners" in the business, and the advantages of this to the company are obvious.

How can an employer decide which type of plan he should adopt?

You should seek the advice of your attorney, an actuary, and a trust officer. Your attorney will advise you as to the legal aspects; the actuary will inform you of the costs of a pension plan; and from the trust officer you can gain the benefit of his experience in developing and administering retirement trusts for other companies.

How should I go about setting up a plan for my company?

Your attorney (using information supplied by the actuary, your accountant, and the trust officer) can write a retirement plan for your company tailor-made to your needs and specifications.

SUPPLIER NOTES

R. L. Carroll of 408 McIver St., Greenville, S. C., has been appointed exclusive representative in the southern states for **Heany Industrial Ceramic Corp.**

Mr. Carroll
Heany

Mr. Booth
Union Special

Recent changes in management sales personnel recently completed by **Union Special Machine Co.** are: Marion M. Moulton, assigned as assistant sales manager with headquarters in Chicago, Ill.; Larry M. Brown, appointed manager of technical sales and assistant to Mr. Moulton; Clarence L. Rosenquist, named New York district manager; William G. Booth, assigned to Atlanta, Ga., as district manager; and Merritt M. Ambrose, who was named manager of the product application department in Chicago.

The Organic Chemicals division, **American Cyanamid Co.,** has appointed Dr. T. F. Cook commercial development manager. He is responsible for coordinating technical service and market research and development functions of the dye, textile chemical, and other industries. * * * John L. Boeing has been named to the sales and merchandising staff of the fibers division. He serves in the woven goods department working with cotton and rayon mills.

Armstrong Cork Co. has transferred Wayne W. Downs to the Greenville, S. C., district office as a salesman. * * * E. W. Jones has been named field sales manager of the industrial division. * * * Armstrong announced plans for combining all of its activities outside the United States into one organization to be known as International Operations. I. Wayne Keller has been named general manager of the new organization. He will continue as controller.

William B. Woodall, Jr., has joined the sales staff of **Arnold, Hoffman & Co., Inc.** He will service accounts in the Atlanta, Ga., area. He replaces John T. Rose who has been assigned to the Charlotte, N. C., sales office as manager.

The State of Alabama and the National Safety Council have awarded special citations to the Research Center of **The Chemstrand Corp.,** Decatur, Ala., for the completion of five years without a disabling injury. The record involves more than 3,770,000 man-hours.

The B. L. Montague Co., Inc., has opened a new conveyor sales and engineering division at Greenville, S. C. The new offices are located in the firm's recently opened branch office

Mr. Green

Mr. Thompson

building on Highway 291 By-Pass. Curtis E. Green heads the new division as director of conveyor sales. John W. Thompson has been appointed chief conveyor engineer.

Ralph Gossett & Co., southern representatives of **Nylco Products, Inc.,** has appointed Robert H. Griffith and his associate, Ish Payne, Jr., Chattanooga, Tenn., to represent the firm on the sale of metallic yarn.

Among the latex products being produced at the new Clifton, N. J., plant of **Morningstar-Paisley, Inc.,** is Morpatex, a line of textile latex coating compounds for the upholstery, rug, and carpet industries.

Oakite Products, Inc., recently celebrated its 50th anniversary. The firm published the 50th Anniversary Issue of "Oakite News Service," giving a capsule history of the company and a comprehensive outline of its future goals.

A new building is being constructed in Spartanburg, S. C., by **Union Bag-Camp Paper Corp.** to house a corrugated box plant. It is scheduled to go into production in December, 1959.

Willcox & Gibbs Sewing Machine Co. is operating three enlarged distribution, sales, and service centers. They are in Philadelphia, Pa., St. Louis, Mo., and Atlanta, Ga. It is expected that the larger quarters will enable the firm to maintain larger stocks and extra parts, as well as an increased sales and service force.

Creative PR, Inc., an independent public relations company, has been organized by Anderson & Cairns, Inc. Ralph C. Tanner has been named president, Ashley W. Burner vice-president, Raymond Corder secretary, and Harold Lester treasurer.

An independent design consulting firm has been formed in Salem, Mass. Known as **Camden Associates, Inc.,** the new firm is located at 8 Irving St. Robert H. Hurley is president, Wallis E. Stuart, III, is vice-president, and David H. Donnan is treasurer.

Victor H. Lawrence has been appointed representative for **Hart Products Corp.** in the Western United States for the sale of textile, leather, and industrial chemicals. Gary Thomas was named technical sales representative serving the textile and paper industries in New York state and Western Connecticut.

Greenville Steel & Foundry Co. has named **Parrott & Ballentine** southern sales representatives with entire responsibility for sale of its textile machinery in the south. Coincident with the expanded sales responsibility, John E. Derryberry, a vice-president of Greenville Steel & Foundry, joined

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will reduce . . .
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BREAKING
of your . . .
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Waste Disposal
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Pulp & Paper Mills
Surveys & Reports

GREENVILLE,
SOUTH CAROLINA

SUPPLIER NOTES

the Parrott & Ballentine organization. He will travel out of the firm's Greenville, S. C., office.

James Barringer has been made treasurer of **Crompton & Knowles Corp.** He replaces Rufus S. Frost, who has retired.

Celanese Corp. of America has changed the name of its Textile Division to Fibers Division. Joseph L. Barach has been named sales development manager of the division, and Robert P. Wilson was appointed assistant general sales manager.

L. O. F. Glass Fibers Co. has been acquired by **Johns-Manville** and will be operated henceforth as **Johns-Manville Fiber Glass, Inc.** R. H. Barnard has been elected president of the new division, and F. H. May, Jr., has been named vice-president and general manager. General offices are at 1810 Madison Ave., Toledo, Ohio.

Young Chemicals, Associated, Greensboro, N. C., has been appointed sales and service representatives by **Metal Hydrides, Inc.** The firm's territory includes the southern and southeastern United States.

The New Jersey office, laboratory, and warehouse facilities of **Metro-Atlantic, Inc.,** are now located at 100 Wagaraw Rd., Hawthorne. All sales and service in that area will be handled through the new facilities. Ross E. LeCompte is in charge.

A patent application has been filed by **American Viscose Corp.** for a new man-made fiber and its method of manufacture. Tentatively called "Fiber 40," the new product is being tested and evaluated in end use applications in the firm's laboratories.

The new southern office of **Riggs & Lombard, Inc.,** has opened at 227 W. Third St., Charlotte, N. C. Heading the office is L. T. Parkman. Also based at this headquarters is Jim Cook of the firm's Cook Manufacturing Co. division; he will specialize in activities concerned with cotton finishing and bleaching equipment.

Loy R. Whiteside has been appointed manager of the Chicago, Ill., sales branch of Solvay Process Div., **Allied Chemical Corp.**

Ira L. Griffin Sons, Inc., is now the only licensed manufacturer and distributor of Griffin Size Applicators. The new plan was inaugurated to enable the firm to render quicker, more efficient service to users.

M. W. Jenkins' Sons, Inc., has elected Stanley E. Worden to the post of president and treasurer. Alan J. Christensen was chosen secretary and vice-president. Richard B. Jenkins remains as a consultant to the firm with the title of vice-president.

Howard Sterne has been appointed assistant to Lawrence J. Horan, southeastern division manager of **National Starch Products, Inc.,** in Atlanta, Ga. * * * Facilities at the vinyl acetate polymerization plant in Meredosia, Ill., have been increased by 50%. * * * Lucien Buck, design and sales engineer, has been honored by a life membership in the American Society of Heating and Air-Conditioning Engineers.

A new warehouse and sales office has been opened at 205 Airport Rd., Greenville, S. C., by **The J. M. Tull Metal & Supply Co., Inc.** The new facility is managed by James H. Joyner.

George Forstot and Robert W. Wesson have joined the staff of the Textile Fibers department, Union Carbide Chemicals Co., division of **Union Carbide Corp.** Both will be headquartered in New York City.

Mr. Barringer
Crompton & Knowles

Mr. Frost
Crompton & Knowles

Mr. Parkman
Riggs & Lombard

Mr. Joyner
J. M. Tull

Mr. McCall
Whitin

Mr. McConnell
Whitin

Mr. Dalton
Whitin

Mr. Farley
Stanley Works

R. J. McConnell has retired from his position as vice-president in charge of sales of cotton system machinery at **Whitin Machine Works.** He will continue his association with the company in the capacity of consultant to the sales department and to customers. R. I. Dalton, Jr., has been named to succeed Mr. McConnell. Mr. Dalton was previously southern agent in the firm's Charlotte, N. C., office. * * * Mason P. Thomas has joined Whitin and is assigned to the new machinery sales division. He is working out of the Charlotte office. * * * Jesse A. McCall has accepted a position in Whitin's Atlanta, Ga., sales office. He replaces W. G. Stainton, who recently resigned.

John W. Farley has been appointed manager of Magic Door Sales for Stanley Hardware, division of **The Stanley Works.** He previously headed the Farley Co., marketing consultants.

William W. Webster has accepted a position with the textile sales staff of **Industrial Rayon Corp.** He is assigned to the Pennsylvania area.

Wica Chemicals, Inc., has appointed Chester G. Landes technical director.

Deltox Rug Co. has announced that Charles R. Cross has been named marketing manager for "Stabiloc Scrim," a laminated backing for tufted carpets, with responsibility for sales and service of the product to the carpet industry.

According to an announcement by **Saco-Lowell Shops,** new equipment being installed in the new Foster Plant being built by Alice Manufacturing Co. includes 70 Gwaltney spinning frames; 15 Versa-Matic drawing frames, 4 deliveries each; 16 FS-2 roving frames equipped with Pneumastop, 154 anti-friction card coilers; 16 high production combers, 4 single-process two-beater pickers with automatic feed control; 8 F-7 feeder hoppers with No. 15 openers; 2 F-5 waste feeders; 2 No. 16 openers with No. 11 condensers; and 2 No. 12 openers with No. 11 condensers. * * * Saco-Lowell has announced that the name "MagneTrol," formerly used to describe the magnetic pressure system adapted to roving and spinning top rolls, has been changed to "MagneDraft," a name officials feel to be more suitable. * * * Jay L. Cherry has been appointed advertising manager of Saco-Lowell Shops.

Geigy Dyestuffs, division of **Geigy Chemicals Corp.,** has begun construction of a one-story, 60,000 sq ft building in Charlotte, N. C. Scheduled for completion about mid-year, the structure will house the offices, laboratory, and warehouse now located on W. 11th St. * * * Frank F. Myers has been appointed manager of Geigy's Charlotte, N. C., office. He succeeds Howard M. Sprock, who has gone into partial retirement. Mr. Sprock will continue to represent the company in a number of accounts in the Charlotte area.

Mr. Landes
Wica Chemicals

Mr. Webster
Industrial Rayon

Mr. Cherry
Saco-Lowell

Mr. Myers
Geigy Dyestuffs

20 YEARS OF EXPERIENCE

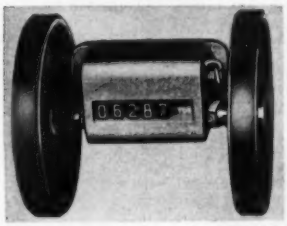
and service in

"QUICK RESET" COUNTERS

TRUMETER

"QUICK RESET"

REVOLUTION OR STROKE COUNTERS



PRICE: (Counter only) 4 DIGITS $21.50
5 DIGITS $23.00
F.O.B. NEW YORK

PRICE FOR WHEELS DEPENDING ON SIZE AND TYPE

"QUICK RESET"

PREDETERMINED COUNTERS—ONE FLICK TO THE LEVER FOR REPEAT RUN—UNTIL NUMBERS ARE CHANGED

PRICE: 4 DIGITS $39.75
5 DIGITS $42.50
F.O.B. NEW YORK

"QUICK RESET"

SLOPING FRONT MODEL REVOLUTION OR STROKE COUNTER

PRICE: 4 DIGITS $23.25
5 DIGITS $24.75
F.O.B. NEW YORK

PRICE FOR WHEELS DEPENDING ON SIZE AND TYPE

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Applicants must possess a Bachelor degree, preferably in Textile Engineering, and have a minimum of 5 years experience in the synthetic fiber field involving textile processing, quality control, and/or testing and evaluation.

Chemstrand's Acrilan plant is located in Decatur, Alabama—a growing community situated in the pleasant Tennessee Valley area, which offers a diversity of recreational opportunities. Excellent schools and numerous churches are only a few of the advantages of family living in Decatur.

Employment at Chemstrand offers salaries commensurate with education and experience, liberal insurance and retirement programs and modern working facilities. Send resume indicating academic training, experience and salary history to:

Technical Personnel Manager
The Chemstrand Corporation
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Decatur, Alabama

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TENSION METERS
Quick Trigger Action
For Yarns, Wires, Rubber, Cords and Tape
American made and serviced, always accurate
TENSITRON, INC., Harvard, Mass.

POSITION WANTED

"Young married man with textile training & interested in growing into greater responsibility: Textile school graduate, experienced in cotton mfg., will locate, resume upon request."

Reply to Box 50, Textile Industries, 806 Peachtree St., N. E., Atlanta 8, Georgia.

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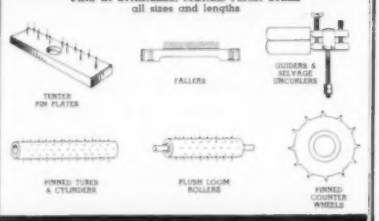

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Extract*

■ "WHAT effect and how much effect does reworkable white waste and card strips have on mill performance?"

In order to answer these often-asked questions, we conducted tests which show some of the effects of blending waste with cotton.

The two types of cotton selected for these tests had the following fiber properties:

Grade and Staple	Micronaire	Pressley
M sp. 15/16"	3.4	72
SLMEW 1-1/16"	4.0	83

With each of these cotton, 6% and 12% reworkable white waste were blended for one series of tests, and 25% and 33-1/3% card strips were blended for another series of tests. Each test was repeated three times in order to minimize the effects of experimental error.

The results shown in Figs. 1-4 are the average results of these tests.

Figs. 5-8 show the results of the blends with SLMEW 1-1/16" cotton.

On the whole, the results of the white waste blends were very good. However, it must be remembered that these were laboratory tests and the cotton was processed much less than it would have been in normal mill operations. Therefore, lower results should be expected in production runs.

It should also be remembered that in small-scale testing such as this, the blending is done more evenly and accurately than would normally be done

*From a paper presented at a recent Textile Quality Control Association meeting.

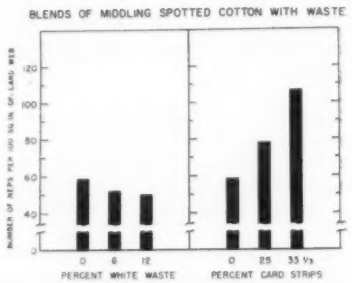

Fig. 1 shows the nep count for M sp. cotton alone and the blends with reworkable white waste and card strips. The nep counts for the reworkable white waste blends were actually slightly lower than the 100% cotton. This may be due to the fact that the cotton had a Micronaire reading of 3.4; whereas the reworkable white waste was slightly coarser. The number of neps for the card strip blends were as expected and increased sharply as the percentage of strips in the mix was increased.

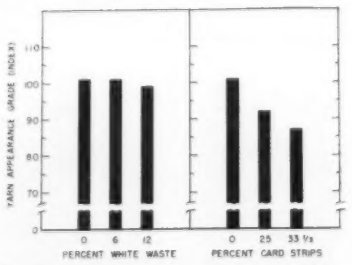

Fig. 2 shows the yarn appearance grade index for the same blends. There was little or no change in yarn appearance when the white waste was added to the blend, but the addition of card strips lowered yarn appearance significantly.

reworkable white waste, tests show

in a full-scale run. However, the results of these tests indicate that up to 12% reworkable white waste can be processed satisfactorily if properly handled.

The blends of raw cotton and card strips produced results as expected, but more pronounced differences should be expected in the mill due to additional handling. These tests again prove that anyone planning to use card strips can do so only if lower quality, lower strength, and higher waste can be tolerated.

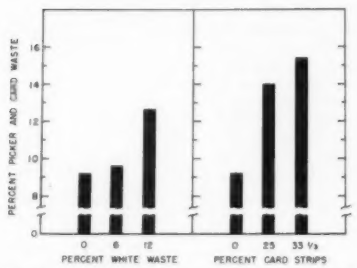

Fig. 3 shows the effects of blending waste and raw cotton on picker and card waste. The introduction of waste into the blend caused a significant increase in picker and card waste.

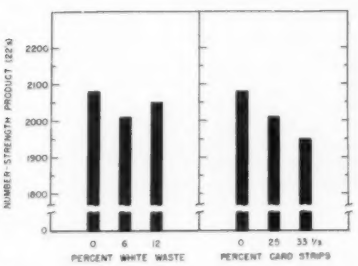

Fig. 4 shows the effects of blending waste and cotton on yarn strength. The results for the white waste are not consistent with the percentages used, but there is a slight trend toward lower yarn strength as more waste is added. The trend when blending card strips is very definitely toward lower yarn strength as the percentage of card strips is increased.

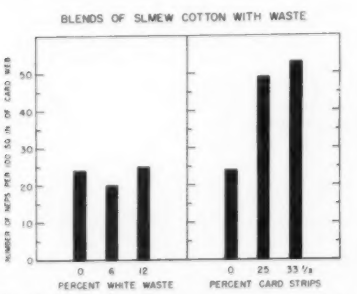

Fig. 5 shows the effect on the nep count as the two types of waste are added to the mix. There is no definite trend for the white waste as the nep count is about the same for all tests. The card strips cause a very definite increase in neps in proportion to the amount of waste added.

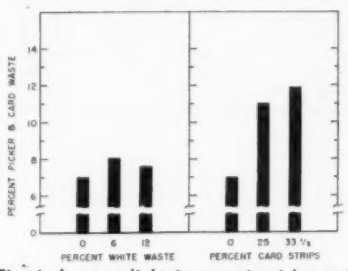

Fig. 6 shows a slight increase in picker and card waste as the white waste is blended with the raw cotton and a very significant increase in picker and card waste when the card strips are used.

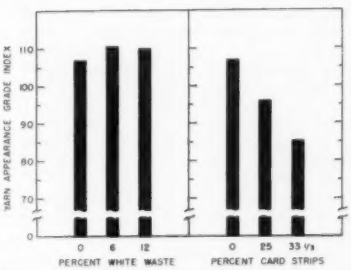

Fig. 7 shows the effect of waste on yarn appearance. Contrary to what we expected, the white waste blends show a slight improvement in yarn appearance. This improvement is very slight and should not be expected in mill runs. The blends with card strips and raw cotton produced consistently lower yarn appearance grades as the percentage of card strips was increased.

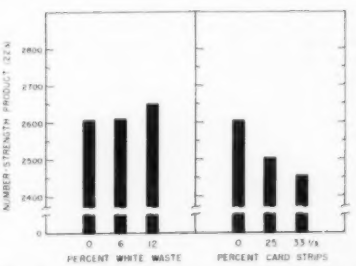

Fig. 8 shows the effect on yarn strength. The yarn strengths for the blends using white waste were equal to or slightly better than for 100% cotton. These results were also unexpected. The white waste which was used in these tests was obtained from one of our mill friends who had some irrigated cotton in their mix. This may explain the small increase in strength. The card strip blends were as expected, with decreasing strength as the percentage of strips was increased.

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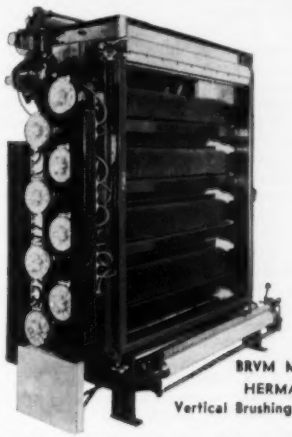

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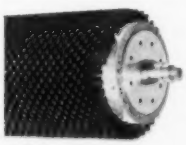

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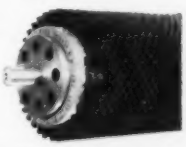

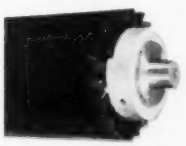

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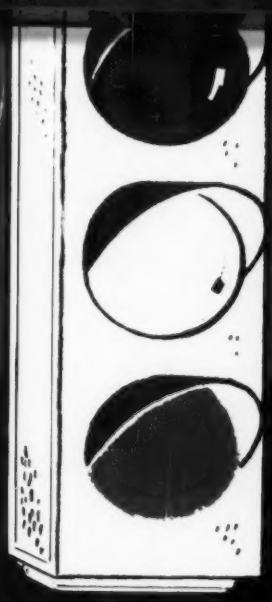

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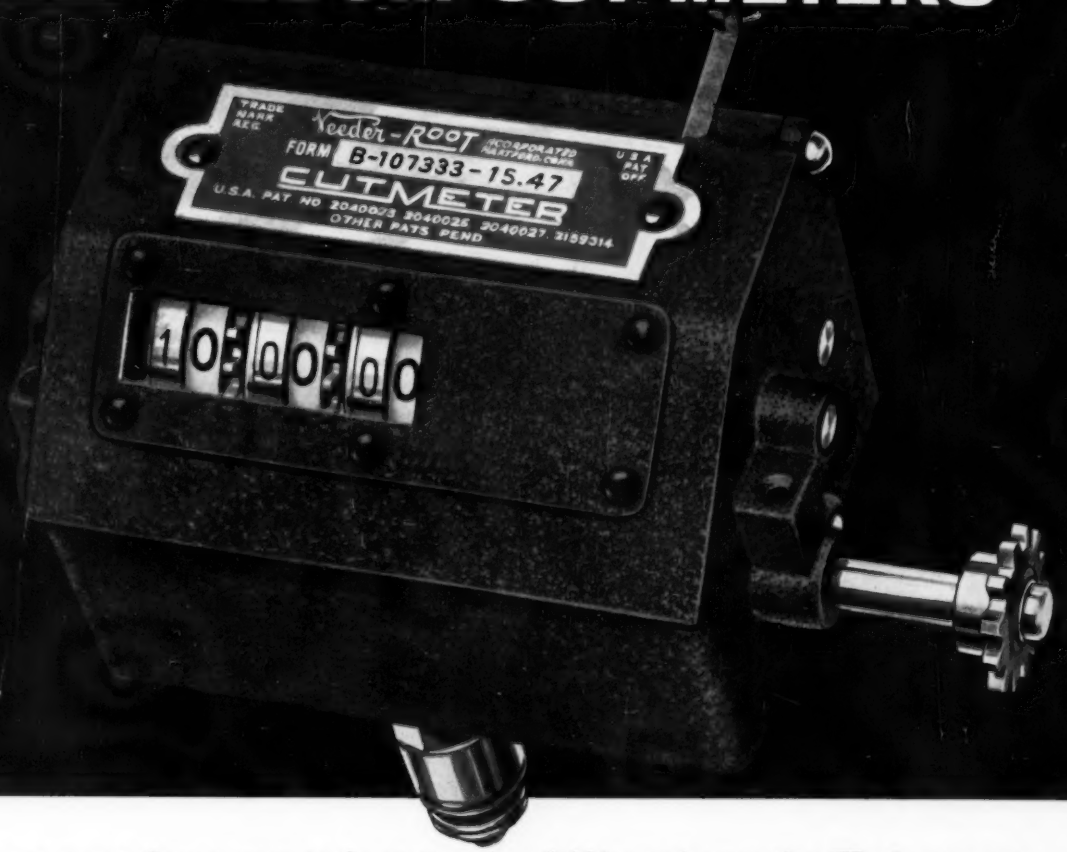

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